ORISSA REVIEW

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Shri C. M. Poonacha, Governor of Orissa delivering his address at the inaugural function of SriJagannath Sanskrit University at Puri on July 7, 1981.

Shri C. M. Poonacha, Governor of Orissa addressing the Oriya-Hindi Literary Conference organised by the Utkal Prantiya Rashtrabhasa Prachar Sabha at Cuttack on June 25, 1981.

Chief Minister Shri J. B. Patanaik laying the foundation-stone of SriJagannath Sanskrit University at Puri on July 7, 1981.

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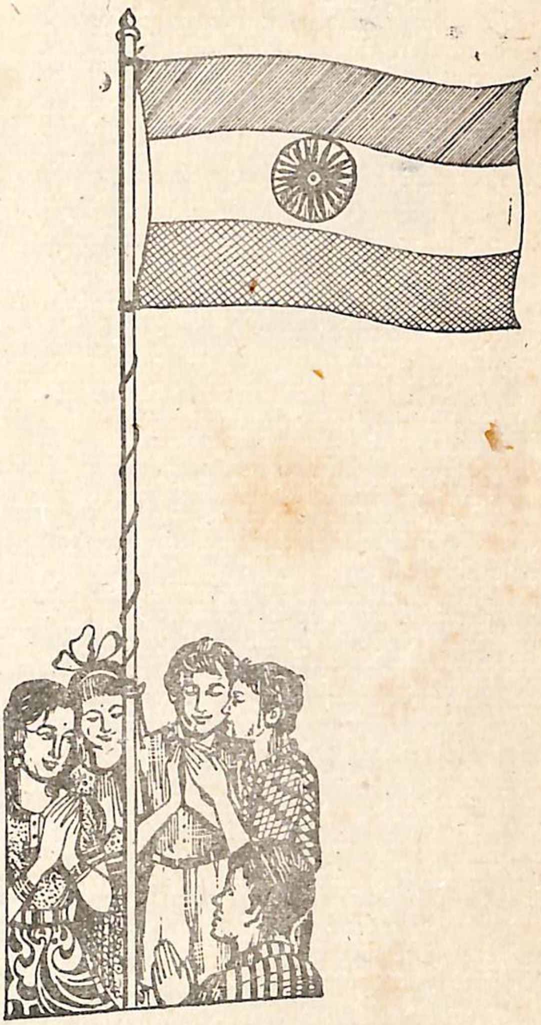

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ORISSA REVIEW seeks to provide a condensed record of the activities and official announcements of the Government of Orissa and other useful information. Many items appear in summarised form. Such items should not be treated as complete and authoritative versions.

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Message of Sri Aurobindo for the Fifteenth of August 1947

August 15th, 1947 is the birthday of free India. It marks for her the end of an old era, the beginning of a new age. But we can also make it by our life and acts as a free nation an important date in new age opening for the whole world, for the political, social, cultural and spiritual future of humanity.

August 15th is my own birthday and it is naturally gratifying to me that it should have assumed this vast significance. I take this coincidence, not as a fortuitous accident, but as the sanction and seal of the Divine Force that guides my steps on the work with which I began life, the beginning of its full fruition. Indeed, on this day I can watch almost all the world-movements which I hoped to see fulfilled in my lifetime, though then they looked like impracticable dreams, arriving at fruition or on their way to achievement. In all these movements free India may well play a large part and take a leading position.

The first of these dreams was a revolutionary movement which would create a free and united India. India today is free but she has not achieved unity. At one moment it almost seemed as if in the very act of liberation she would fall back into the chaos of separate States which preceded the British conquest. But fortunately it now seems probable that this danger will be averted and a large and powerful through not yet a complete union will be established. Also the wisely drastic policy of the Constituent Assembly has made it probable that the problem of the depressed classes will be solved without schism or fissure. But the old communal division into Hindus and Muslims seems now to have hardened in to a permanent political division of the country. It is to be hoped that this settled fact will not be accepted as settled for ever or as anything more than a temporary expedient. For if it lasts, India may be seriously weakened, even crippled: civil strife may remain always possible; possibe even a new invasion and foreign conquest. India's internal development and prosperity may be impeded, her position among the nations weakened, her destiny impaired or even frustrated. This must not be; the partition must go. Let us hope that may come about naturally, by an increasing recognition of the necessity not only of peace and concord but of common action, by the practice of common action and the creation of means for that purpose. In this way unity may finally come about under whatever form—the exact form may have a pragmatic but not a fundamental importance. But by whatever means, in whatever way the division must go; unit must and will be achieved, for it is necessary for the greatness of India's future.

Another dream was for the resurgence and liberation of the peoples of Asia and her return to her great role in the progress of human civilisation. Asia has arisen; large parts are now quite free or are at this moment being liberated : its other still subject or partly subject parts are moving through whatever struggles towards freedom. - Only a little has to be done and that will be done to-day or tomorrow. There India has her part to play and has begun to play with an energy and ability which already indicate the measure of her possibilities and the place she can take in the council of the nations.

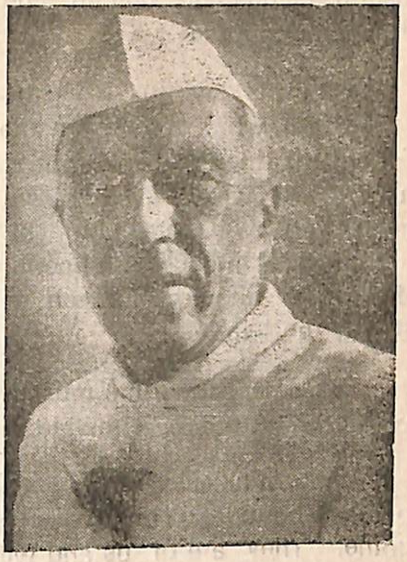
The third dream was a world-union forming the outer basis of a fairer, brighter and nobler life for all mankind. That unification of the human world is underway; there is an imperfect initiation organised but struggling against tremendous difficulties. But the momentum is there and it must inevitably increase and conquer. Here too India has begun to play a prominent part and, if she can develop that larger statesmanship which is not limited by the present facts and immediate possibilities but looks into the future and brings it nearer, her presence may make all the difference between a slow and timid and a bold and swift development. A catastrophe may intervene and interrupt or destroy what is being done but even then the final result is sure. For unification is a necessity of Nature, an inevitable movement. Its necessity for the nations is also clear for without it the freedom of the small nations may be at any moment in peril and the life even of the large and powerful nations insecure. The unification is therefore to the interests of all, and only human imbecility and stupid selfishness can pervert it; but these cannot stand for ever against the necessity of Nature and the Divine will. But an outward basis is not enough; there must grow up an international spirit and outlook, international forms and institutions must appear, perhaps such developments as dual or multilateral citizenship, willed inter-change or voluntary fusion of cultures. Nationalism will have fulfilled itself and lost its militancy and would no longer find these things incompatible with self-preservation and the integrality of its outlook. A new spirit of oneness will take hold of the human race.

Another dream, the spiritual gift of India to the world has already begun. India's spirituality is entering Europe and America in an ever increasing measure. That movement will grow; amid the disasters of the time more and more eyes are turning towards her with hope and there is even an increasing resort not only to her teachings, but to her psynhic and spiritual practice.

The final dream was a step in evolution which would raise man to a higher and larger consciousness and begin the solution of the problems which have perplexed and vexed him since he first began to think and to dream of individual perfection and a perfect society. This is still a personal hope and an idea, an ideal which has begun to take hold both in India and in the west on forward-looking minds. The difficulties in the way are more formidable than in any other field of endeavour, but difficulties were made to be overcome and if the Supreme will is there, they will be overcome. Here too. if this evolution is to take place, since it must proceed through a growth of the spirit and the inner concciousness, the initiative can come from India and, although the scope must be universal, the central movement may be hers.

Such is the content which I put into this date of India's liberation; whether or how far this hope will be justified depends upon the new and free India.

SRI AUROBINDO



Birth of Free India

"At this solemn moment, when people of India, through suffering and sacrifice, have secured freedom, I, a Member of the Constituent Assembly of India, do dedicate myself in all humility to the service of India and her people to the end that this ancient land attains her rightful place in the world and make her full and willing contribution to the promotion of world peace and the welfare of mankind".

In a stirring message to the Nation, Jawaharlal Nehru said :

"The appointed day has come—the day appointed by destiny and India stands forth again after long slumbler and struggle, awake, vital, free and independent. The past clings on to us still in some measure and we have to do much before we redeem the pledges we have so often taken. Yet the turning point is past, history begins a new for us, the history which we shall live and act and others will write about.

"It is a fateful moment for us in India, for all Asia and for the World. A new star rises, the star of freedom in the East, a new hope comes into being, a vision long cherished materialises. May the star never set and that hope never be betrayed.

"We rejoice in that freedom, even through clouds surround us and many of our people are sorrow-stricken and difficult problems encompass us. But freedom brings responsibilities and burdens and we have to face them in the spirit of a free and disciplined people.

"On this day, our first thoughts go to the architect of this freedom, the Father of our Nation who, embodying the old spirit of India, held aloft the torch of freedom and lighted up the darkness that sorround us. We have often been unworthy followers of his and we have strayed from his message, but not only we, but the succeeding generation. will remember this message and bear the imprint in their hearts of this great son of India, magnificent in his faith and strength and courage and humility. We shall never allow that torch of freedom to be blown out however high the wind or stormy the tempest.

"Our next thoughts must be of the unknown volunteers and the soliders of freedom who without priase or reward, have served India even unto death.

"We think also of our brothers and sisters, who have been cut off from us by political boundaries and who unhappily cannot share at present in the freedom that has come. They are of us and will remain of us, whatever may happen and we shall be sharers in their good and ill fortune alike.

"The future beckons to us whither do we go and what shall be our endeavour ? To bring freedom and opportunity to the common man to the peasants and the workers of India. To fight and end poverty and ignorance and disease. To build up a prosperous, democratic and progressive nation and to create social, econamic and political institutions, which wjll ensure justice and fullness of life to every man and woman.

"We have hard work ahead. There is no resting for anyone of us, till we redeem our pledge in full, till we make all the people of India, what the destiny intended them to be. We are citizens of a great country, on the verge of bold advance and we have to live up to that high standard. All of us, to whatever religion we may belong, are equally the children of India, with equal rights, privileges and obligations. We cannot encourage communalism or narrow mindedness for no nation can be great whose people are narrow in thought or in action.

"To the nations and to the people of the World, we send greetings and pledge ourselves to co-operate with them in furthering peace, freedom and democracy.

"And to India, our much loved motherland, ancient, enternal and ever new, we pay our reverent homage and we bind ourselves afresh to her service.

JAI HIND"

(The message of late Jawaharlal Nehru, the first Prime Minister of India to the Nation in the Constituent Assembly on the Fifteenth August, 1947).

* * *

A Development Full of Promises

Dr. H. B, MOHANTY

Making an assesment of industrial development of Orissa during the last one year by a person who was closely associated with growth of industries in the State since Post World War II period is no doubt an alluring proposition. It not only will give me the opportunity to have a hindsight view of the entire process but make me reminisce the past.

Some 40 years back a highly trained research scientist like me had to leave the Education Department out of sher frustration. The reason was simple one. The Department could not provide me a meagre Rs. 12,000 for carrying on my on-going research in the fields of Radio and Electronics. Little did I know then that something else was in store for me I was drafted to make on "Industrial Survey of Orissa" for Post-War Development of Industries. This was my first contact with industry in Orissa, and the Government's first awakening to the need for developing industries. As there was repeated reminders from the Central Government and no one in the Civil Survice then could take up the job, the Government wanted prompt action for early submission of the Report to the Central Government. The systematic presentation of facts and available data categorywise for different class of industries in this Report attracted the attention of Sir Richard Gregory, the then Economic Advisor to Government of India. They circulated it to all the States to service as a model for preparing their reports. This brought credit to Orissa. As a mark of appreciation, Government of India conferred a British Title on the author; possibly the first of its kind in Orissa. The State was at the time under Governor's rule. The Governor questioned "You have said to many industries can be put up in Orissa, but where are the men to do the job?" Given the opportunity, I volunteered to create the necessary man-power which is basic to all development, being the first of Sir. Vishweswaria's 7—Ms, essential for industrial development.

Orissa had then no Technical Institution worth the name. An Engineering School, with 40 seats for only Civil Overseers, a Medical School for 30 Licenciates a year and 4 seats each, reserved in the Engineering and the Medical College at Patna, constituted the totality of facilities for Technical Education.

In Orrissa best students usually hail from poor families. Efforts were therefore made to creat 100 scholarships. Finance Department, as usual, bluntly turned down the proposals saying that there was no money for such frivolities. So a way out had to be found. Providence provided a novel solution—the inspiration to create the "Orissa Loan Stipend Fund". A start was made with Rs. 10,000 donated by a Civilian-turned-Industrialist friend from Madras. And what has been the result? So far, 5,000 deserving Oriya young men have been trained abroad and more than 10,000 in India in all branches of higher study and training. The corpus of the fund is now nearly Rs. 3·00 crores. It is indeed a matter of pride for

Orissa, that this scheme was adopted later by the Government of India to start the "Central Government Loan Stipend Scheme". The Orissa Loan Stipend Fund has been truly the making of Orissa, otherwise for lack of trained manpower, development work would have been much hampered.

Next to manpower comes motive power specially electric power which is the *sign qua non* of industrial development. But all that Orissa then had was a pigmy 450 K. W. Diesel Station at Cuttack. Naturally therefore foremost attention was given to power-generation. Through the special efforts of the then Chief Minister, Orissa got sanctioned the Hirakud Dam Project, which was one of the first three Hydro-Electric Projects taken up by Central Government. Its power potential was estimated at 3,50,000 K. W. This was truly the beginning of industrial development in Orissa. Till then Orissa had hardly any industry except one Paper Mill and a small Sugar Mill. With the coming of the Hirakud Project the process started snow-balling. To build the Dam itself, it became necessary to build the Cement Plant at Rajgangpur. This was possibly the First Joint Sector Project in the country taken up at a time when the word Joint Sector was not even known. Hirakud was soon followed by Machhkund, and later by Balimela Hydel and the Talcher Thermal Power Projects. To provide a solid base load for Hirakud power, an Aluminium Plant with 10,000 tonns capacity was built near the dam. Other power, intensive industries such as Ferro Manganese Plants at Joda and Rayagada, Ferro Silicon at Thiruveli and Ferro-Chrome plant near Jajpur Road followed. The industrial development arising from Hirakud power touched the zenith with the establishment of the First State owned Steel Plant at Rourkela. Prominent among the other industries which came in the wake of these power projects are 3 Fertilizers, 2 Paper, 1 Detonator, 1 Heavy Machine Building, 3 Textiles, 2 Sugar, 1 Tube, 5 Refractories, and 1 Aero-Engine factory. Finally as an offshoot of the Hirakud Project was built the deepest draft Port in India at Paradip to provide an outlet for foreign trade. Thus a solid foundation had been laid for rapid future development. This gives briefly a picture of the industrial back ground when the present Government came to power in June, 1980.

II. PRESENT ACTIVITIES AND ACHIEVEMENTS

Thus starting from a scratch, Orissa made good progress in the Industries sector during the First and Second Plan periods, save for an interval when an industrialist came to the helm of affairs and established the Aero-Engine Factory at Sunabeda, People had expected great developments in the industrial sector and hoped Eldorado would come to Orissa. There was much fan-fare but little lighting of furnance fire. Orissa was really in a moribund state when the present Government came to power.

Not much was expected of a Government consisting mostly of new comers, except for its enthusiastic young leader who was thoroughly versed in Administration as Minister in the Union Government. Immediately after he became the Chief Minister, his amazingly bold announcement to put up "1,000 industries in 1,000 days investing Rs. 1,000 crores" created a flutter throughout the country. The industrial circles took this not as the definition of an objective but as the expression of a pious wish meant to create enthusiasm among the people. Some scoffed at the announcement and openly doubted its feasibility. A few of the Chief Minister's wellwishers thought that though 1,000 industries can certainly be built with the vast resources that Orissa possesses, but it would take time. For a poor State like Orissa raising of Rs. 1,000 crores would however be a herculean task. Let us now review the activities of the present Government during the brief period of 1 year they have been in office and see what has been the achievement,

To quicken the pace of industrialization, the Government announced a very liberal industrial policy effective from August 1980. What was most impressive was not so much the offer of liberal incentives, which are more or less the same as offered by different State Governments but the rapid reorganisation of the entire industrial set up in the State so that a single authority can take care of all the problems of an entrepreneur and he has not to dance attendance on several authorities as had been the practice so far. A time limit of 21 days was set for disposing of all matters for the establishment of an industry. How far this has been actually observed in practice needs examination. But there is no doubt that follow up action has been definitely speeded up. In place of sluggishness and stagnation there are every where signs of plusating animation. This creates a very favourable impression on the prospective entrepreneurs. That a very favourable climate to attract industries to Orissa has been created is well proved by the large number of Industrialist who are coming forward with numerous proposals.

How great is the success achieved by the Government in the industries sector would be clearly evident from the performance as summerised in the table by the various promotional, executive and financial Agencies of the Government during the past one year.

Performance Data

Agency (1)	Continuing Schemes (2)	Project under execution or identified (3)	Outlay (crores) (4)	Employment potential (5)	Remarks (6)
1. Industrial Development Corporation (IDCOL).	8	32	Rs. 41	30,000	State's pioneer undertaking for Public Sector Industries.
2. Industrial Promotion & Investment Corporation (IPICOL).	39	.. 144	Rs. 104 Rs. 732	5,100 33,000	Main Promotional Agency for Private and Joint Sector.
		1980-81			
3. Orissa State Finance Corporation (OSFC).	No. of Industries	Loan granted		Loans recovered.	Main Financing Agency for private projects, Re-financing unit under IDBI.
	7565	Rs. 29·37 crores		Rs. 6·12 crores	
4. Village & Small Scale Industries.	Target—1980 Achievement—2003		Target Rs. 9·9 Achievement Rs. 13·1	11,080 14,840	Most impressive performance Achievement for exceeded targets.
5. Artisan & Tiny Sector.	Target 18,500 Achievement 32,744		Rs. 1·85 Rs. 3·73	27,750 54,870	Achievement nearly double the target.

The above table shows clearly how great is the progress made during year.

The most important project under IDCOL are, Konarka Jute Mill, at Dhanmandal, Hira Cement Works at Bargarh and the Ferro-Chrome Plant at Jajpur Road. Under IPICOL important projects are Sponge Iron Plant at Keonjhar, Tube Project at Rourkela, Refractories at Dhenkanal, Oil Industry and Paper Plant in Koraput and Vanaspati at Balangir.

Ancillary Industries

The present Government is attaching great importance to development of Ancillary and Auxiliary industries near the major industries at Rourkela, Paradip, Talcher, Mancheswar, Chhatrapur, Sunabeda and Chandka.

Apart from Small-Scale Industries that have come up near the major industries, to serve their needs, for the growth Centre at Rourkela, 5 Medium-Scale Industries have been indentified and Feasibility Reports are under preparation. For the Wagon Repair Work at Mancheswar, similar action is being taken in consultation with the Railway. For the Sand Complex at Chhatrapur, Dastur & Co., have prepared a Masterplan with 10 auxiliary industries estimated to cost Rs. 166 crores. The Task Force appointed by the Government of India has indentified for the first phase of the Nucleus Industrial Complex at Chandka, 10 Medium-Scale industries costing over Rs. 67 crores. There are at present 194 auxiliary industries working in the State and supplying goods worth several crores of rupees.

Textile and Handloom Industries

Apart from the existing 5 Textile mills, there are over 3-lakhs Handloom Weavers including scheduled caste weavers in the State. During the year about 10,000 of them were brought under 109 new Co-operative Societies bringing the total number to 409. They produced 234 lakh metres cloth valued at Rs. 10·8 crores. Outside the Co-operatives, the Handloom Development Corporation covered 1,169 additional looms which produced during the year 23·5 lakh meters cloth valued at Rs. 1·41 crores.

To ensure steady supply of yarn to all weavers, the new Government decided to put up 5 Co-operative Spinning Mills each with 25,000 spindles and costing in all about Rs. 8 crores. A Textile Processing Plant at Jagatpur was opened by the Chief Minister only last month. Much will have to be done to build up the feeder as well as auxiliary industries in this sector.

Industrial Infrastructure Development Corporation

To cope with their massive industrialization programme and to ensure quick establishment of industries a new Corporation was set up by the Government to provide various facilities such as land, electricity water, roads & housing, etc. to the new industries. The Corporation plans to develop 50 selected centres all over the State. So far 23 Industrial Estates comprising 697 sheds have been completed.

Central Sector Industries

Though these are not included within the target set by the Chief Minister, in order to give a complete picture of industrial development during the last year, a list of industries in the Central Sector is given below.

Central Sector Industries

Project (1)	Investment (Rs. in crore) (2)	Employment potential (3)	Remarks (4)
1. Aluminium Complex in Koraput (including Railways.)	1500	..	Foundation stone laid by Prime Minister on 29-3-1981. Work already started.
2. Phosphatic Fertilizer Plant at Paradeep.	190	..	Capacity 3 lakh tons in two phases, already approved by Public Investment Board. Work will start soon.
3. Port-based Steel Plant at Paradeep,	3000	30,000	Final decision expected soon.

Project (1)	Investment (Rs. in crore) (2)	Employment/ potential (3)	Remarks (4)
4. Ship Building Yard at Paradeep.	..	..	Under active consideration of Central Government.
5. Railway Wagon Repair Works at Mancheswar.	8·8	3,500	Work nearing completion
6. Sand Complex at Chhatrapur.	..	..	Making rapid progress. 10 Auxiliary industries costing Rs. 166 crores have been planned.
7. Nucleus Industrial Complex at Chandka.	67	6,500	10 Medium-scale industries identified by Task Force appointed by Government of India, 60 ancillary units will be put up round this Complex at an estimated cost of Rs. 5 crores offering employment to about 2000 persons.

III. ASSESSMENT AND FUTURE PROSPECTS

The writer with his long experience of industry, technical training, Power Generation and Port Development, etc. extending over nearly 40 years as detailed at the outset and observing from close quarters the industrial activities of the present Government, is in a vantage position to make critical assessment of the activities of the Government during the past 1 year. Shri J. B. Pattnaik, the Chief Minister is basically a Journalist. Media men are generally men of words than of work. But this soft-spoken gentleman is of a different breed. Throughout the period he was Minister at the Centre, he gave a good account of himself as a man of action and proved to be an able Administrator. He did for Orissa more than some of his predecessors. Beginning from the days of Sir Chandulal Trivedi, the first Governor of Orissa after Independence and former Defence Secretary, we have been trying to build a Naval Training Centre near the Chilika Lake. Even the last British Head of the Indian Navy, Commander Perry who spent two days on the Chilika could not help. As soon as Shri J. B. Pattnaik entered the Defence Ministry, he gave us not only the Naval Boys Training School at Chilika but also a Naval Store at Koraput, and Expansion of the Proof and Experimental Station at Chandipur. Defence activities being secret, few people in Orissa are aware of these development. Besides, as the Minister of Tourism and Civil Aviation at the Centres he gave a big boost to Tourism in Orissa. We have now got the posh ITDC run Kalinga Ashoka hotel at Bhubaneswar and direct Boeing service between Delhi and Bhubaneswar which has greatly helped the flow of foreign tourist traffic to Orissa.

These positive achievements had raised great expectations in knowledgeable circles that the new Chief Minister would be able to achieve much for Orissa. Apart from his other policy decisions, the declaration to put up "1000 Industries in 1000 Days with Rs. 1000 crores" as stated before took the whole country by surprise. Doubts and disbeliefs have been expressed in many quarters. But what has been achieved during the short period of only 1 year, as detailed under the section entitled "Present Activities and Achievements" under his inspiring leadership is highly admirable.

—*—

Ex-Secretary to Government of Orissa
Industries Department

Education for Democracy

Dr. JAGANNATH MOHANTY

Reciprocal Relation Between Education and Democracy.

John Dewey has aptly said "the devotion of democracy to education is a familiar fact" (1) Democracy has always found education as its great support and constant company. Without democracy, education is dry, dreary and dead. Dewey, therefore, has rightly remarked, "The relation between democracy and education is a reciprocal one and vitally so. Democracy is itself an educational principle, an educational measure and policy". (2) He says that democracy and education bear a reciprocal relation, for it is not merely that democracy is itself an educational principle, but that democracy cannot endure, much less develop, without education in its right perspective.

Education has always been used as a process, as a powerful instrument for effecting desirable social changes. Of cource, according to many sociologists, education is not only a process but also a product. They mean to say that education has usually and invariably resulted from social interactions and social changes. It also implies that education is the means through which democracy established social justice. Huxley has, therefore, mentioned.

> "The early educational reformers believed that Universal primary and if possible, secondary education would free the world from its chains and make it safe for democracy. You cannot reach a given historical objective by walking in the opposite direction. If your goal is liberty and democracy, then you must teach people the arts of being free and governing themselves. If you teach them bullying and passive obedience, then you will not achieve the liberty and democracy at which you are aiming'' (2).

Democracy is described as "an experiment in living" and education is not merely a preparation for living but it is living itself. If we want children to earn to live democratically, we must see that our homes as well as our schools are laboratories for that kind of living.

Aims of Education for Democracy

The fundamental aims of education for a democracy are considered to be the development of personality, the training of character and the making of citizens. In planning the life of our schools, in organising the programmes and practices thereof, these objectives must be given due consideration.

Bother the individual and social aspects of personality schould be integrated and co-ordinated. That is to say, the pupil must develop his personality to the best of his capacity. The Association for Education in Citizenship has said that each pupil (*a*) should be given full chance to develop himself as an individual personality so that he may be capable of enjoying his life through the exercise of his own capacities and will be alive to the realities and possibilities of the world around him; (*b*) should know how to play his part as an active member of his community both socially and politically; (*c*) should be equipped to make a contribution in the occupational sphere suited to his interests and aptitudes, and (d) should know how to be in effective communication with his fellow men and his culture by his own articulation and creative capacity". (4)

In fine, the four objectives of education for democracy are promotion of (*a*) Self realisation, (*b*) Civil Responsibility, (*c*) Economic efficiency and (*d*) Human relationship.

Democracy believes in giving freedom to the people but if the people are not educated and are not disciplined for social good, then that freedom would be costly and would take the form of anarchy. For the success of democracy, Mathur has laid down some pre-conditions, two important of which are :

(i) There should be economic betterment of the people, Democracy cannot be established on the hungry stomachs of the people. The people may be prepared to forgo their political freedom if this freedom does not help them to solve their problem of bread.

(ii) The second precondition is the formation of an educated electorate. Democracy can function properly only when the people are educated and they are conscious of their rights and duties. If the people are uneducated then there will develop autocracy in the garb of democracy. A few people will assume the control over the government of the State and will begin to exploit the masses. (5)

Education in a democracy has a very exacting and challenging responsibility. Students of today are the citizens of tomorrow. So they are to be trained in citizenship which involves many moral, social and intellectual qualities that cannot grow automatically. In any kind of autocratic or regimented social order the individual does not need to make any independent thinking or of chalking out his own lines of action.

But in a democratic set-up an individual has to make his own independent judgment on all kinds of complicated, personal, social economic and political issues and to a large extent, decide his own course of action. The first requisite, in this connection, is to develop capacity for clear thinking and making decisions. The Secondary Education Commission, 1952-53 have rightly given a warning in their following observations:

> "To be effective, a democratic citizen should have the understanding and the intellectual integrity to shift truth from falsehood, facts from propaganda and to reject the dangerous appeal of fanaticism and prejudice. He must develop a scientific attitude of kind to think objectively and to base his conclusions on tested data. He should also have an open mind receptive to new ideas and not confined within the prison walls of outmoded customs, traditions and beliefs" (6).

A democracy which is based on faith in the dignity and worth of every single individual, must succeed with the help of an education that aims at the full and allround development of every individual's personality. This requires that education should take into consideration all his needs, psychological, social emotional and practical and cater to all of them. Such democratic education must transcend the narrow academic approach and broaden out into a process of education for living i.e. education to initiate the students into manysided art of living in a community. Both for his own wholesome development and the good of the society, it is essential that he should learn to live with others and to appreciate the value of co-operation through practical experiences and free interplay with others' personalities.

School and Children in a Democracy

The climate of school life and the dynamics of human relations are potent factors in what students learn about the way of life and the values which direct their interpersonal relations, possibly even greater factors than what the school explicitly teaches about democratic human relations. Learning experiences in schools make or mar the growth of democratic human relations.

Since children are the future citizens and the success of democracy depends on their ability, both children and democracy are inter-related and inter-dependent. On April 26, 1936 at the opening of the 4th White-house Conference, President F. D. Roosevelt said, "Definitely we are here with a principal objective of considering the relationship between a successful democracy and the children who form an integral part of that democracy. We no longer set them apart from democacy as if they were a segregated group. They are one with democracy, because they are dependent upon democracy and democracy is dependent on them" (7).

As mentioned already, education is not a preparation for life, education itself is life and school is not the replica of society, school itself is society. At present most of our schools are divorced from the society and the conditions prevalent in the schools are adverse to the growth of democracy. Dewey has, therefore suggested that the school itself should be made "a genuine form of active community life" instead of a place for merely imparting lessons. A society is to him a number of people held together because they are working along common lines in a common spirit and with common aims.

(Courtesy: All India Radio, Cuttack)

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"Let all of us—Hindus, Mussalmans, Parsis, Sikhs, Christians—live amicably as Indians, pledged to live and die for our motherland. Let it be our ambition to live as the children of the same mother, retaining our individual faiths and yet being one, like countless leaves of one tree".

—*Mahatma Gandhi*

The need for massive tree planting in Orissa

SHRI R. C. MOHANTY

The 32nd Vanamahotsava has been celebrated this year from 1st July onwards as in previous years. In the same week, the environmental conservation day has also been celebrated. As a part of the annual death anniversary celebration of late Sanjaya Gandhi, whose love for trees and environmental conservation was well-known, the Youth Congress organisations throughout the country have decided to do tree planting on a massive scale. Apart from tree planting by villagers, town dwellers, school and college students, staff of public institutions, like offices, hospitals and rest houses, this year's celebration have some special programmes, e. g., 'planting for each child', 'development of village forests' and "planting by industries for their raw material requirements". Under the programme "a tree for each child", young school children will be motivated to plant trees in their school campus, village commons and waste lands, so as to build up a sense of love for trees and nature conservation in them. Trees planted will bear their name plates and 'Dafayati right' on the usufruct of the trees will be conferred on those who plant and nourish the trees. Under the programme for "Development of village forests" two villages in each of the Extension Blocks will be selected for adoption by each Forest Extension Officer, while the Forest Range Officer will adopt one in each Block. Both the Forest Extension Officer and Range Officer will develop such patches of selected forests through protection and interplanting for a certain period after which they will be transferred to local village committees for their maintenance and use. Under the scheme "Plantation for industries", plantation of cash crops like cashew, sabai and bamboos will be encouraged through private entrepreneurs. Thus the tree planting programmes, this year, have been taken up in a big way when about 25 lakh seedlings will be planted to help the rural folks to meet their growing need of small timber, firewood and fodder. In the urban areas, such planting will be done more for beautifying the landscape and the eco-development camps organised by N. C. C. and N. S. S. recently at Bhanjanagar, Khurda and Rourkela have done commendable work in this direction.

During past 31 years of Vanamahotsava celebration, millions of trees have been planted through peoples' participation, but few have survived as no after-care was provided. In the new programmes to be undertaken this year, the much needed 'after-care' will be there through the Block planting and in conferring the 'Dafayati' rights which will act as an added incentive.

Our people, particularly the rural part, constituting 92 per cent of the total population, depend on forests for their daily needs like food, shelter, fodder and fuel. They cannot afford to live in a forest-free environment. Like people, our animals need vegetation, hedge-rows and small wood lots for their sustenance and migration. We need trees and their products literally from our cradle to our grave. Yet, we have treated trees and vegetation as of no consequence, meant to be destroyed, not for social gain but for individual profit. Lack of awareness of the role of trees and vegetation in environmental conservation, has led to large scale denudation of natural forests and vegetation resulting in a spate of natural calamities like flash floods, frequent droughts and tornadoes. The mounting expenditure on natural calamities is sapping the economy of the State. The extent of denudation will be appreciated by the fact that nearly 1,20,000 *hac.* of forest area has been lost for agriculture, irrigation and for rehabilitation of people affected in these projects during 25 years following 1952. If this trend is allowed to continue, then, every year, we would be loosing about 4,800 *hac.* of valuable forests. This does not take into account the 3·27 million *hac.* of undermarcated forests affected by shifting (podu) cultivation on the hills, where unfortunately, several of our important rivers have their catchments. With 47 per cent of our forest area suffering from severe erosion, it is natural that the streams and rivers are getting choked, valuable agricultural lands are sandcast and life spans of several of our dams and reservoirs are getting seriously affected.

The average *per capita* forest area in the State is only 0·12 *hac* against the all India average of 0·13 *hac.* and world average of 1·04 *hac.* The position is more acute in the 4 coastal districts which contain only 17 per cent of forests to cater to the needs of 47 per cent of the total population. In the rest of the 9 inland districts, although area under forests is higher, there are pockets of scarcity where firewood prices (Rs. 20 to Rs. 25 per quintal) is beyond the reach of common man. Thus the severe denudation of forests, coupled with its ill distribution, has put tremendous pressure on them to meet the ever-growing needs of small timber, firewood and forage. This has led to wide spread theft in natural forests and overnight fellings of patches of valuable plantations. Simultaneously, the scarcity conditions have also induced the villagers to protect the vestige of village forests where they exist, scrupulously and religiously, which is a healthy trend. People are coming up with a demand to plant fuel wood and fodder, species rather than exotics whose firewood value is doubtful. The firewood famine which has already overtaken us can only be faced with massive planting of fuel wood species on private lands, village waste lands and hedgerows so that they can be available cheaply. The annual firewood requirement for domestic consumption, on the basis of 0·5 cubic meter *per capita* is of the order of 7 million cubic meter, while our recorded production is only 1·5 million cum. The gap is being met by burning agricultural wasta and cowdung which would have normally gone to the field for manuring. With increasing population, this gap is bound to increase by the turn of the century. We may produce more food through intensive agriculture and with advance technology, but a time may come, when we will not have enough fuel to cook our food. It should be our earnest effort to avoid such a catastrophe.

The State Government through their various plantation schemes are planting nearly 12·000 *hac.* annually. Most of such planting is confined to reserve forests and demarcated forests. The annual planting at this rate will not suffice to meet the growing needs of timber and firewood for the entire population. Besides, timber and firewood being bulky, their transport cost to far-flung centres of consumption, often becomes cost prohibitive. It is therefore imperative that the tree planting should be made into a peoples programme. With this in view, the programmes as enumerated above have been initiated to invite people's participation in planting and protection of forests and habitants. It is hoped the rural youth, the school children, the forest users and town dwelling people will render theire helping hands to cover the barren and bald hills, the waste lands and mine heaps, with suitable trees and vegetation which they badly need. There is ample scope for planting of quick growing fuel wood species (Casuarina) and bamboos and sabai grass for profit. In the costal districts some enthrprising people have taken to it on their marginal lands. This trend has to be encouraged and some sort of plantation subsidy provided as incentive for "tree farming".

Conservation of Forests, Angul

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System Reforms in Land Revenue Administration in Orissa : Policies, Programmes and Management

SHRI R. C. ROY

In the post-independence period, the provincial Government of Orissa functioning within the broad frame-work of the national policy[2] became saddled with the twofold task of introducing uniformity and implementing the socialist policies in the field of Land Revenue Administration. In order to understand the magnitude and dimensions of the problems, it becomes interesting to study the historical background.

The province of Orissa was created in the year 1936 by amalgamating the Orissa Division (i.e., Cuttack, Puri Balasore districts) of Bihar and Orissa with the Oriya speaking tracks of Madras and Central Provinces. The Joypore Zamindari of Vizagapatnam district and major part of Ganjam district were transferred from Madras to Orissa and named as Koraput and Ganjam districts respectively. The Khariar Zamindari (now Nowapara subdivision of Kalahandi district) of Raipur district and Padampur area of Bilashpur district of the Central Province were transferred to Orissa. Besides, 24 feudatory states[3] were integrated with the province of Orissa. The districts were reorganised and the entire State came to consist of 13 districts. In this background, diverse land revenue systems of the constituent parts of Orissa-Bengal system, Madras system, Central Province system and merged States system—demanded the fulfilment of a herculean task of the officers of the Administrative class.

I shall now attempt to give a birds eye view of different land revenue systems that were prevalent in constituent parts of Orissa when it came into existence.

The coastal districts system

A subdivision was the unit of land revenue administration in Zamindari areas of Cuttack, Puri and Balasore districts[4].

A subdivision was divided into revenue thanas and further subdivided into parganas. As provided in the Bengal Kanungo and Patwari Regulations of 1817[5], every pargana should have a Kanungo and every village a Patwari. In Khasmahal areas, a village was the unit and a Sarbarakar was the collecting agent with various other miscellaneous duties to perform.

The Madras system

In ex-Madras areas, the ryotwari or Kulwar system was first introduced in Madras by Col. Read in 1792 which envisaged survey of every holding in the district for assessing rent payable by a ryot which had the status of a cultivating tenant paying revenue to the Government. The existence of an intermediary between the Government and the ryot was eliminated by a system in which the Government would collect revenue from the ryots through its officers and staff.

The district of Koraput used to be covered by the ancient and impartible Zamindari of Jeypore and a portion of the ancient Zamindari of Panchipenta, most of which was subsequently possessed by the Zamindars of Jeypore. Raiyatwari system and in part village rent system called Mustajari were in vogue in respect of the cultivated lands in the district. The ryotwari system which came to be introduced in Rayagada subdivision provided for maintenance of register of ryots and their holdings, rent due, description of boundary, local names and seed capacity. The Collector's land cess demands register was the only record in case of a Mustajari village of the Mustajar appointed by the Maharaja. The Madras Estate Land Act, 1908 regulated the relationship between the landlord and the tenant. The entire Zamindari was divided into Tanas in charge of an Amin or Tana Offcer and each Tana was divided into a number of revenue Fikas in charge of Revenue Inspectors. The Revenue Inspectors would collect revenue from the Mustajars of Mustajari villages and in case of ryotwari villages directly from the tenants or through a village head man.

The district of Ganjam was divided into revenue divisions, each comprised in a number of Taluks. A Taluk would consist of a number of Firkas, a Firka a group of revenue villages. For each revenue group there would be a separate village establishment having; (a) village head man or Karji; (b) Village accountant or Karnam: (c) village police or Talyari; (d) village peon or Vetti.

The western half of the district of Ganjam, situated beyond the Eastern Ghats was administered as an Agency on behalf of the Governor. The Collector of district was the Agent to the Governor and his divisional officers were Assistant and special Assistant Agents. The Maliahs of Parlakhimendi, Bodokhemendi, Sannokhemedi, Bodogoda and Ghumusur formed the Agency tracts of Ganjam district prior to 1948. In Chokapad Khandam, a part of Ghumsur Maliahs, ryotwari settlement was introduced in 1914. The Pandakhole Agency, adjoining Sarda Taluk was also settled. The rest of the Agency was being administered according to the prevailing customs. There was no land revenue and the Government got small amounts of Nazarana from the hill-chiefs of Kattingia, Godapur, Ronaba, Korada. Bodogodo, Bodo-Khemendi, Jarada, Surangi, Jallantra, Mandasa, Budasarangi and Parlakhimandi. The Adivasis, namely, Khonds and Saoras living in the agency areas were to make, in lieu of land revenue, certain customary payments in cash and in kind to the Muthaheads[7] which was called Mamools.

The Central Province System

According to the central province land Revenue system which was prevalent in Sambalpur district there were Khalsa areas and Zamindari areas. In respect of a khalsa village, the village head man used to hold land direct from the Government. There were six classes of propritors having varying degrees of propriotory interest; (*i*) Zamindars; (*ii*) Malguzars; (*iii*) Gauntias; (*iv*) Bhogra-bhogis; (*v*) Malik Mak buzas; and (*vi*) Brahmottars.

If the village had been settled with a landlord body or community it was called village (or Mahalwar) system prevalent in the Khalsa area. When the propriotory right in a village is conferred on a person called Malguzar it becomes Malguzari settlement. The revenue collecting agent in a Khalsa village was called Gauntia or Lambardar. There were a few Khalsa ryotwari villages in which the revenue collecting agent was called Patel. The villages were grouped into Patwari Halkas under the charge of a Patwari and the Revenue Inspector of a circle consisting of a number of Halkas would control the Patwaris. In Zamindari areas, the Thikadar was the collection agent for one or more villages settled with him. A Patwari Halka was the unit of land revenue administration.

The Merged States System

With respect to merged states, a general pattern emerged in which a village became generally the unit of revenue administration and collection of revenue was being done through the village head men called Sarbarakars, Gauntias, Thikadars, Padhano, Ganjus etc. There are few Zamindars who had their own arrangements for collection of revenue. States had evolved their own system not based on any codified law.

Viewed from the thesis of cultural and linguistic affinity of the Orissan people, the existence of such a diversity in differing land revenue systems presented an antithesis, and therefore the monumental task of bringing about a synthesis by introducing a uniform system had to be undertaken by the Provincial Government in right earnest. Progressive legislations began to be enacted even before independence, and in the post-independence period comprehensive policies found manifestation in all pervasive programmes and implementation[8]. The entire machinery of revenue and general administration underwant a complete restrucuturing and was set on the proper gear.

I shall now deal with the post-independence period in so far as it relates to ever-widening measures initiated by the Government in order to establish direct relationship between the rayats and the Government to enforce distributive justice through the process of elimination of the parasitic intermediaries, and to facilitate acceleration in the increase of productivity and production in agriculture.

Abolition of Intermediary Interests

The Orissa Estate Abolition Act, 1951 enforced with effect from the 9th February 1952 aimed at abolising all intermediary[9] interests in land between the raiyat and the Government. The consequences that ensued are as follows: (*i*) The raiyats of the estates became the raiyats of the Government. (*ii*) Except trust estates constituting temples, all temporary leases of large estates exceeding 33 acres in area were brought under the Government and subsequently enabled to acquire raiyati rights of permanent and heritable nature. (*iii*) Temporary leases of still smaller estates who were allowed to continue as such were also enabled to acquire permanent and heritable rights under the provision of the Orissa Land Reforms Act, 1960 (*iv*) Personal service tenure holders were invested with raiyati rights. But religious and charitable estates of public nature classified as trust estates were allowed to retain personal service tenure holders under them (*v*) Homestead and home farm lands possessed by an intermediary were settled with them on raiyati terms. (*vi*) Trust estates of public nature could get the additional benefits of settlement of (*a*) tanks, waste lands which were being used for religious purpose; and (*b*) land and building needed for efficient management.

The Government machinery could steer clear of all obstacles in abolishing 4,25,720 estates and paid compensation and perpetual annuity amounting to Rs. 8·42 crores till 31st December 1979.[10]

Agrarian Reforms

The objectives sought to be achieved in agrarian reforms through progressive legislations can be broadly summarised: (*i*) to bring about uniformity with respect to the land rights of raiyats; (*ii*) to provide for better rights of temporary leases, share croppers and other tenants; (*iii*) to confer occupancy rights in respect of homestead lands; (*iv*) to protect the Scheduled Castes and Scheduled Tribes from illegal alienation of land; (*vii*) to regulate resumption of land by the landlord for his personal cultivation and (*viii*) to fix a ceiling limit of land holdings and to distribute the ceiling surplus land to the weaker section of the community. The Orissa Land Reforms Act, 1960 enforced, with effect from October 1965 recognised only three categories of tenants to eradicate the evils of numerous types of tenants having only right of cultivating possession: (*a*) Temporary leseees of estates vested in the Government (*b*) Sub-tenants and under-raiyats recorded as such in the record-of-rights (*c*) Unrecorded tenants including share croppers (Bhag chasis). All these three categories of tenants are enabled to acquire raiyati rights over the land under their personal cultivation on payment of premium/compensation at Rs. 800 per standard acre in five equal and annual instalments.

The other redeeming features of the statute are as follows:—

(*a*) Sub-letting of land is no permissible, except in cases of persons under disability and privileged raiyats. Persons under disability mean widows, unmarried women, divorced women, minor, mentally and physically disabled persons, serving members of armed forces and raiyats having less than three standard acres of land. Priviledged raiyats mean public financial institutions, co-operative societies, Lord Jagannath of Puri, religious and charitable trusts of public nature, etc.

(*b*) Right of non-evictability has been provided.

(*d*) The Maximum rent payble by a raiyat/tenant has been prescribed which will prevent rack-renting.

(*e*) A landlord became entitled to resume 50 per cent of the land under the cultivating possession of his tenant. Similarly, a tenant could apply to the Revenue Officer for determination of his non-resumable land.

(*f*) Tenants inducted after 1st October 1965, would be eligible to acquire raiyati right.

(*g*) Raiyats and tenants in possession of dwelling house and farm house built at their own expenses and with the implied consent of the owner were allowed to acquire raiyati status.

(*h*) Ceiling of land holdings :

The relevant provisions of the statute was enforced with effect from the 7th January 1972 and finally with some amendments from the 2nd October 1973. The salient features are summarily stated as follows :

(*i*) Ceiling area is computed in respect of a person. A person may be an individual, a body of individuals, a corporate body or a family. A family means and includes the husband and wife, and their major and minor children excluding major married sons who had separated from the family by partition or otherwise before the 26th September 1970.

(*ii*) A uniform ceiling rate of 10 standard acres[11] in respect of a family consisting of not more than five members is applicable all over the State, which is increased by two standard acres for each member in excess of five subjects to a maximum of 18 standard acres. In addition a family may be allowed a maximum area of three standard acres for homestead purposes including tanks.

(*iii*) Any transfer or partition effected by a surplus owner after the 26th September 1970 is regarded as illegal.

(*iv*) Lands held by previleged raiyats: industrial or commercial undertakings, mills, factories, workshops, agricultural university; scholl, college or any institution conducting research in agriculture plantation of coffee, coco or tea, are exempted from the application of the ceiling law.

(*v*) Compensation[12] is payable to the surplus land owners at the prescribed rates.

(*vi*) Surplus lands vest in the Government and it can distribute the same to the weaker section of the community. A total area of Ac. 1,00,543 was settled with 76,333 beneficiaries till 31st March 1981, of which 25,478 were scheduled castes, 29,994 scheduled tribes and 20,861 other landless persons. A beneficiary is required to pay premium at the rate of Rs. 400 per standard area.

(*vii*) The Government extended financial assistance to the surplus land allottees at the rate of Rs. 1,000 per hectare for purchase of inputs, and land development, etc. in all areas of the State except those covered by special projects like S. F. D. A., M. F. A. L., D. P. A. P. and C. A. D. A sum of Rs. 97,67,198 was released by the end of 1978-79.

(*i*) Restrictions have been imposed on transfer of land by Scheduled Castes or a Scheduled tribe raiyat to another person not belonging to such caste or tribe without the permission of the Revenue Officer.

(*j*) The Statute provides for constituting watchdog committees such as a local committees of officials and non-officials in each Revenue Inspector's Circle, District Executive Committee at the district level and a Land Commission at State level.

Settlement of waste land

Besides, the State machinary also engaged itself in completing village land reservation proceedings on modified principles to identify cultivable Government waste lands measuring Ac. 5·45 lakhs which were distributed to 3·25 lakhs landless persons for agricultural purposes of which Ac. 3·12 lakhs could be distributed to 1·71 lakhs Scheduled Tribes, Ac. 1·21 lakhs to 0·68 lakhs Scheduled castes and Ac. 1·12 lakhs to 0·86 lakhs other landless persons.

Consolidation of holding

Since traditional practices of owning agricultural holdings scattered in and outside the village with possibilities of ever increasing fragmentations do not facilitate optimum utilisation of agricultural inputs, stable and random, for maximising production, the State Government launched upon a massive programme of land consolidation in January 1974. It is a village development and replanning programme designed to consolidate the holdings of each raiyat and to prevent fragmentation. A Master plan in respect of all the consolidable areas in the State has been drawn up which will be implemented within a time frame of 10 years at an estimated outlay of Rs. 100 Crores. The World Bank came forward to render assistance in respect of Rs. 3·25 lakhs hectares of land in 2,636 villages identified in the command areas of the major irrigation projects. The consolidation programmes have, by the end of 1980, covered 8·16 lakhs hectares comprised in 4·866 villages.

Conclusions

The personnel in the revenue and general administration wings of the State Government have been challengingly discharging their functions not only in bringing about a uniformity in land revenue administration system but also implementing numerous progressive legislations which in turn have been affecting a rapid socio-economic transformation.

A variety of revenue laws have delegated powers of adjudication to the officers of this administrative organ: a modern government must adequately discharge various functions of far-reaching social and economic import.

The management development programmes conducted by the Gopabandhu Institute of Administration and Training for the officers of the Orissa Administrative Service and that by the Lal Bahadur Shastri National Academy of Administration, Mussoorie for the Indian Administrative Service officers have, therefore, been suitably designed to include some input of legal matters for the generalists. The administrative authority has been satisfying the general body of citizens that it is proceeding with reasonable regard to the balance between the public interest which it promotes and the individual interest which it transforms.

Notes

1. In its cognitive significance, each of the following terms are etymologically explained: (a) System; an aggregation or assemblage of objects joined in regular interaction or interdependence; a set of units combined by nature or art to form an integral, organic or organised whole; an orderly working totality; a coherent unification. (b) Policy; a definite course or method of action selected by a Government from among alternatives and in the light of given conditions to guide and usually determine present and future decisions; specific decision or set of decisions designed to carry out such a chosen course of action; such a decision or set of decisions together with the related actions designed to implement them: a project programme consisting of desired objectives and the means to achieve them. (c) Programme; the sequence of schemes of activities to be performed for attending certiain defined objectives. (d) Management: the executive function of planning, organising, co-ordinating, directing, controlling and supervising any activity with responsiblity for result.

2. The Indian National Congress set up a high power committee with Pandit Jawaharlal Nehru as its Chairman and the recommendations of the committee formed the basis of the economic programme of the congress party which also provided guidelines for the national government in the formulation of its land reforms policy.

3. Athgarh, Athmallick, Baramba, Bamra, Boudh, Daspalla, Dhenkanal, Gangpur, Hindol, Kalahandi, Keonjhar, Khandpara, Narsinghpur, Nayagarh, Nilagiri, Pallahara, Patna (Balangir), Rairakhol, Ranpur, Sonepur, Talcher, Tigirla and Mayurbhanj.

4. The districts of Cuttack, Puri and Balasore came under the British control in 1803. Being conferred with the status of permanently settled estates, the ancient killas of Kanika, Aul, Kujanga, Harishpur, Darpan, Sukinda, Khurda and Jagir Mahal including Parikud were brought under the Permanent Settlement Regulation of 1973.

5. Principal duties of the Kanungos: (1) maintain records of Government Khas land; (2) Keep records of revenue free lands, collect cess from revenue free holders and report escheats; (3) report deaths of proprietors and furnish agricultural statistics; (5) distribute Taccavi loans and fire relief money and hold revenue enquiries, etc.

6. The Karji, representative of the Government would perform specified duties: (i) Collection of revenue; (ii) reporting of crimes or breach of peace; (iii) maintenance of village statistics; (iv) supervision of village police and village peons. The duties of the Karnam consisted of: keeping records-of-rights, survey maps, information of areas under crops, areas benefited by irrigation, condition of crops and accounts of revenue demands. The proprietory Estate village service Act II of 1894 would govern their services in proprietory estates.

7. Paiks, the local militia maintained by the Muthahead, came to be known as Patro, Bissoyi, Naik, etc. They had been given agricultural holdings called Inam. Inam lands were given in lieu of emoluments to the servants of distinction, persons of sacredotal class or to temple institutions and for communal service.

8. The Orissa Tenancy Act, 1913, Madras Estate Land Act, 1908; The Madras Permanent Settlement Regulations, 1802; The Central Province Land Revenue Act, 1917; The Central Province Tenancy Act, 1920; The Orissa Preservation of Private lands (Prohibition and Alienation Act, 1948; The Administration of Orissa State's order, 1948; The Orissa Tenancy Protection Act, 1948; The Orissa Estates Abolition Acts, 1952; The Orissa Tenant's Relief Act, 1955; The Orissa Scheduled Area Transfer of Immovable Property (By Scheduled Tribes) Regulation, 1956; The Orissa Land Reforms Act, 1960, The Orissa Land Settlement Act, 1962; The Orissa Consolidation of Holdings and Prevention of Fragmentation of Land Act, 1972, etc.

9. An intermediary was defined as proprietor, sub-proprietor, landlord, land-holder, malguzar, thikadar, gauntia, tenure-holder, under tenure-holder and included an inamdar, jagirdar, zamindar, illaquadar, kharposhdar including the ruler of an Indian State merged with the State of Orissa and all other holders or owners of interest in land between the raiyat and the State. A raiyat has been defined as a person having right of occupany according to the tenancy law or rules or customs in vogue in the area.

10. As envisaged in the Orissa Estates Abolition Act, 1952, bigger estates were first brought under the management of Anchal Adhikaris subject to the control of the Collectors, Revenue Divisional Commissioners and Board of Revenue. But when it was found impracticable, the administration of vested estates was organised on Khasmahal pattern. Tahasils were reorganised in 1960 and Revenue Inspector's circle delimited. The Orissa Revenue Administration (Units) Act, 1963, prescribed a Revenue Division, a District, a Subdivisional and Tahsil as the units of revenue administration.

11. A standard acre means one acre of double cropped irrigated land or $1\frac{1}{2}$ acres of single cropped irrigated land or 3 acres of rainfed paddy land or $4\frac{1}{2}$ acres of any other category of land. In case of irrigated land, the source of irrigation should belong to the Government or a private owner. Private source includes only lift irrigation from perennial water sources operated by diesel or electric power.

12. Compensation payable to the surplus land-owners will include : (a) interest on the unpaid balance at the rate of 2·5

(*See page 23*)

Family Welfare :
Area Development Programme in Orissa

—USHA UPADHYAY

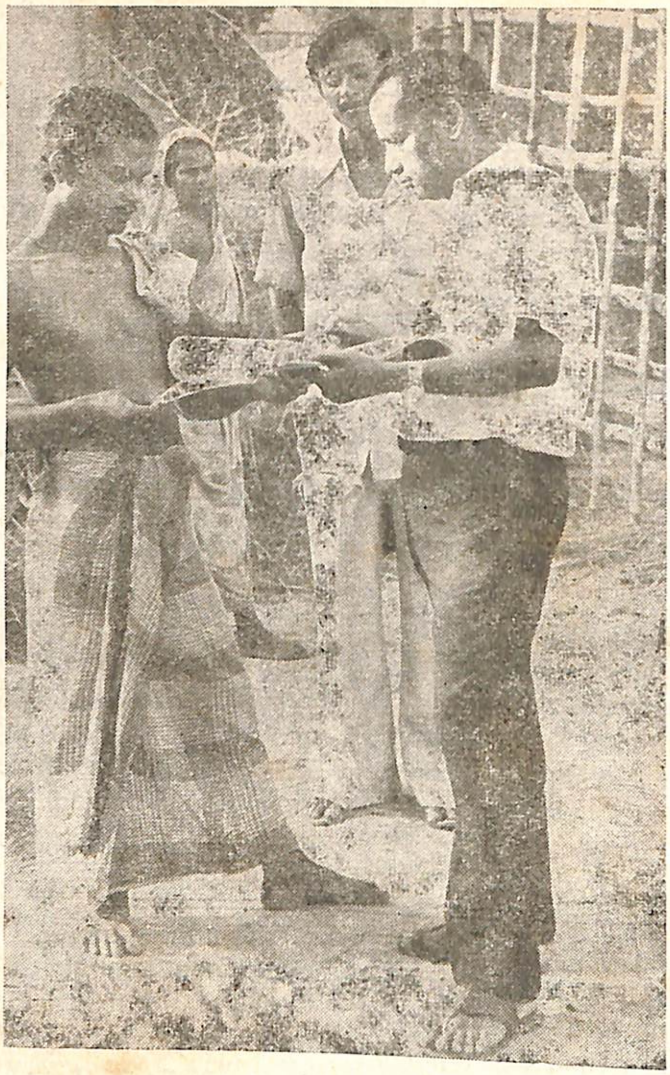
In her address to the World Health Organisation at Geneva recently, the Prime Minister called for a world-wide campaign to check population growth so that developing countries would have a better standard of living. In pursuance of this widely accepted national objectives, a family welfare programme was recently launched in Orissa, for ensuring good health of the people in a positive way, rather than providing medical facilities for the sick. Thus maternity and child health services for the masses form an integral part of socio-economic development, in which Orissa ranks low amongst the States.

The family welfare programme is aimed at bringing health care to the people, particularly mothers and small children living in remote, rural areas. The five-year project, in which the Government of India, Orissa State Government, and the British Government are collaborating has a financial outlay of Rs.39·00 crores, of which Rs .14·00 crores have been contributed by the British Government. Initially it covers the districts of Cuttack, Puri, Kalahandi, Ganjam and Phulbani. According to the project, which is based on the Government of India model plan, every village with a population of 1,000 will be provided with a trained birth attendant (traditional mid-wife) and a community health volunteer. Every unit of population of 5,000 an auxiliary nurse or mid-wife is provided while a population of 20,000 will be served by an upgraded sub-centre, lady health visitor and suitable supervisory staff. A primary health centre has been provided for each block, while the programme aims at increasing the infrastructure facilities and making the delivery system more effective. The primary health centre will also be provided with additional nursing and auxiliary staff, an ambulance and twelve residential quarters.

The programme includes a training component to upgrade the services of the traditional birth attendants and also orient auxiliary nurses and mid-wives for their rural based activities. An action research programme to survey, monitor and evaluate the programme is also in operation supported by a communication system with Audio Visual aids.

The building programme has been allotted the buik of the resources, about 43 per cent of the project expenditure, as a number of rural projects have suffered adversely due to the lack of basic physical facilities in rural areas. Other important components of the project cost are staff salaries (29 per cent), medicines, equipment and furniture (16 per cent), transportation (7 per cent) and training, etc., (5 per cent).

An important bench-mark for the project are the preliminary results of census, 1981, which have shown some remarkable results in regard to the natural growth rate of population in the five selected districts. During the decade 1971—81, it has been found that while the natural population growth rate in Orissa as a whole was 1·84



Health Educator pretesting draft Mass Educational Material in a village in Puri district.

per cent, it was 1·79 per cent in the project districts and only 1·34 per cent in Kalahandi and 1·38 per cent in Phulbani districts. The census data also reveals that the overall population growth rate of the State has dropped from 25·05 per cent to 19·97 per cent during the last decade. The project authorities are enquiring into the reasons why this growth rate has come down and state that they do not have enough information from census to answer the question. Population growth is the function of birth, death and migration and more data would be required for understanding the phenomenon of reduced birth rates, in terms of age specific birth rates and net re-production and mortality rates. Another important conclusion from the census data is that the districts with lower acceptance rates of the programme, viz., Puri and Cuttack have also highest levels of male and female literacy. This means that formal educational status is not directly associated with adoption of family welfare measures.

The programme is making special efforts to deliver welfare services to the tribal and economically weak people including marginal farmers and landless labourers who form an important segment of Orissa's population. These suffer from acute mal-nutrition, poor water-supply and inadequate or no sanitation facilities. Due to social influences and cultural life styles their susceptibility to infection, mal-nutrition and diseases is maximum and has reached critical dimensions.

In operational terms the task of the programme include identification of pre-natal and post-natal cases, maintaining of live and continuing contacts with families and provision for child care, family planning, hygienic environmental conditions and nutrition. In the sub-centres simple curative care would be administered, while more complicated cases would be referred to the Health Visitor and Doctor. The Project Co-ordinator Dr. H. C. Mishra feels that a majority of ailments do not require sophisticated treatment and can be handled by a local paramedical person. This has also been proved by the success attained at the Jamkhed Project of Dr. & Dr. Mrs. Arole in Maharastra.

In a State with poorest *per capita* income in the country, lack of infrastructure, limited development of industrial potential and agriculture largely at a subsistence level, the health and family welfare programme is bound to have hurdles. The plan and the personnel executing it provide hope that a better life for the poor, rural families of Orissa may be possible and could be emulated in other comparable areas.

150, Saheed Nagar,
Bhubaneswar-7.

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(*From page 20*)

per cent : (b) 50 per cent of the market value of trees standing on the land : (c) the value of the land : for the first ten standard acres, Rs. 800 per standard acres ; for the next ten standard acres Rs. 600 per standard acres ; for the next ten standard acres : Rs. 400 per standard acres ; and for the rest, Rs. 200 per standard acres.

Joint Commissioner,
Training & Co-ordination,
Gopabandhu Institute of Administration and Training, Orissa, Saheed Nagar,
Bhubaneswar-7.

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Re-allocation of portfolios among council of ministers

CABINET MINISTERS

1. Shri Janaki Ballav Pattnaik, Chief Minister	General Administration, Home, Information and Public Relations, Planning & Co-ordination, Industries and Irrigation & Power.
2. Shri Upendra Dixit	.. Revenue and Transport
3. Shri Basudev Mahapatra	.. Agriculture & Co-operation
4. Shri Gangadhar Mahapatra	.. Education & Youth Services
5. Shri Dayanidhi Nayak	.. Commerce
6. Shri Raghunath Patnaik	.. Finance and Law
7. Shri Ram Chandra Ulaka	.. Harijan & Tribal Welfare

MINISTERS OF STATE

1. Shri Harihar Karan	.. Health & Family Welfare
2. Shri Kuanria Majhi	.. Forest, Fisheries & Animal Husbandry
3. Shri Jugal Kishore Pattnaik	.. Labour, Employment, Tourism, Sports and Culture.
4. Shri Bhajaman Behera	.. Food & Civil Supplies
5. Shri Niranjan Pattnaik	.. Irrigation & Power
6. Shri Basant Kumar Biswal	.. Works, Housing, Urban Development, Mining & Geology.
7. Shri Habibulla Khan	.. Excise
8. Shri Krushna Charan Patnaik	.. Community Development & Rural Reconstruction.
9. Shri Kishore Chandra Patel	.. Industries
10. Shri Lalitmohan Gandhi	.. Planning & Co-ordination

DEPUTY MINISTER

11. Shrimati Saraswati Hembram	.. Community Development & Rural Reconstruction.

Flood mapping and flood control in Orissa with remote sensing technique

SHRI R. C. MOHARANA

Flood mapping with remote sensing techniques can provide accurate boundary of the inundated zone and extent of flood hazards. Hydromorphological mapping of the flood plains with the help of LANDSAT imagery and aerial photographs can delineate various geomorphological features which have direct relation with the flood. Modification of these features can control flood. Besides, post-flood development of flood plains like knowing extent of sand splay over cultivable lands and their reclamation can be done successfully. Remote sensing is an accurate, rapid and economical method for providing necessary data for planning and management of flood prone areas.

Remote sensing has become the most popular and advanced technique in the regional analysis and environmental study in the world. This technique can be successfully applied in flood mapping, land use and water resources management in the flood prone areas and flood control. Multispectral synoptic regional view, provided by LANDSAT imageries, is the most helpful in getting the accurate map of flood inundated zone. For detailed analysis and study of these areas, large scale aerial photographs can be interpreted.

Data for such investigations have been acquired by ground based methods which are expensive and time consuming. Besides, data available with ground methods, are incomplete and do not provide adequate definition of the flooded zone for management. But adoption of different remote sensing techniques can simplify, expedite and improve the process of flood mapping and control.

FLOOD MAPPING

Much of the loss of life and property damage from natural disasters is caused by floods. This is due not only to the frequency of floods but to the concentration of significant part of the population in areas susceptible to flooding. The reason being the flood plains provide fertile and high yielding lands.

It is seen that the time distribution of rainfall is far more uneven in case of India than many other parts of the World. This uneven precipitation is largely responsible for the flood hazards.

Period		India	England
June—September		73·7	32·2
October—December	..	13·3	30·4
January—February	..	2·6	17·5
March—May	..	10·4	19·9

Floods are nothing but the overbank flow of the water precipitated in the mountainous catchment of the river. This overbank flow and inundation of the flood plain can be prevented by three ways :

1. Increasing the channel capacity
2. Increasing channel gradient for rapid discharge.
3. Storage of flood water

Flood plain mapping involves many fact of geology and geomorphology. Flood plain maps and hydromorphological maps of the flood plain can provide the details of landform in the inundation zone for flood prevention methods stated above.

REMOTE SENSING AND FLOOD MAPPING

Remote sensing techniques have demonstrated the capacity to map flood inundation zones and the flood plain areas more efficiently than any other method.

LANDSAT imageries provide the synoptic picture of a large area in four spectral bands in 0·5 to 0·6, 0·6 to 0·7, 0·7 to 0·8 and 0·8 to 1·1 milimicron. Out of these bands the band 7 i. e. 0·8 to 1·1 milimicron provides, more contrast and thus better discrimination of flooded areas. The demarcation of inundation zone is accurately done with the satellite data. (Fig.). The new and a very valuable aspect of flood mapping using remote sensing technique is that, even after the flood recedes the flood inundated areas can still be mapped. The accurate delineation of the maximum flood boundaries from infrared imagery can eliminate much of the expensive ground survey. The eventual aim of the mapping is to create a data base to predict the area that will be inundated by a major flood. This information is becoming increasingly important for proper and safe land use management and planning in flood prone area. Flood boundaries may be established accurately even in vegetated areas. The multispectral analysis and infrared imagery provides most suitable information of geomorphology and hydromorphology of the river basin and sand splays due to flood in the flooded areas.

For further detailed study of the flood plains, particularly the morphological features, the aerial photographs are highly essential. This is because the stereo pairs of aerial photographs provide three dimensional view of the land forms which requires modification for flood control.

REMOTE SENSING IN FLOOD CONTROL

With remote sensing techniques the geomorphological features like river channels and their gradient, meandering, levees or embankments, backswamps, pointbars, burried channels and sand splays, etc. which have direct relation with the flood can be delineated. Alternation of improvement of some of these fluvio-geomorphic features can control the flood or reduce the flood hazards. The main flood control measures which can be developed with the help of remote sensing techiques are.

1. Flood control dams
2. Development of levees
3. Floodways and overflow basins, and
4. Channel modifications

Flood control dams and reservoirs can store flood-waters for controlled release later. These reservoirs are different than the reservoirs made for irrigation and power generation. While the laters kept full particularly to provide water for drought period, the flood control reservoirs are kept at low levels to provide storage for flood water. These are located in low lands, beyond the mountain valleys.

Development of levees such as construction of artificial levees or improvement of natural levees can increase the channel capacity and control the flood. Aerial photo interpretation is a suitable technique for location of the levees.

Floodways—Excess flood water in the channel can be diverted through controlled openings in the levees to abandon channels neighbouring rivers in the flood plain or into the over flow basins occurring within the flood plains. Many times the basins are the backswamps, whereas in some instances artificial constructions enclose low areas to form such basins.

Channel modification—Straightening of channel by eliminating the meanders contribute flood control. This reduces tangential overbank floods. Besides, the shortened course increase the gradient and velocity of the channel preventing deposition and thereby increasing its capacity.

Smoothening of channels reduces friction and increases flow and reduces the flood heights upstream.

Construction of revetments specially on the outside of the curves protect against bank-errosion. Location of active bank-errosions can easily be located by aerial photo-interpretation techniques.

REMOTE SENSING AND FLOOD HAZARD MAPS

The repetitive coverage of the "Landsat" imagery provide temporal data for every nine days to find out the flood hazards for estimating the damages occurred and guidelines for flood control measures. The major problem encountered after the flood is the mudflow and sandsplays destroying the croplands. The sandsplays can easily be located and their aerial extent can be determined with the Landsat imageries of different spectral bands. The flood hazard map meet the need for this type of information and assist planning and management of flood plains. Therefore regional planning may be furthered with the advancement of satellite flood plain mapping techniques.

REMOTE SENSING FOR FLOOD CONTROL MEASURES IN ORISSA

Certain flood control measures in different river basins of Orissa with the application of remote sensing techniques can be suggested as follows:—

1. Delineation of flood prone areas of Mahanadi and Brahmani for flood prediction.
2. Hydromorphological investigations for finding reasons of various inundations.
3. Detailed geomorphological study of Mahanadi-Brahmani co-deltaic region.

4. Detailed topographic study around Mahanadi-Brahmani drainage basin for selecting sites for flood control reservoirs.

5. Quarternary geological study of the flood plains of Mahanadi, Brahmani and Baitarani and their surroundings.

6. Embankment/levee delineation and improvement studies.

7. Channel modification in Mahanadi-Brahmani co-delta.

8. Investigation of excess run off and their control in Vansadhara, Kolab, Nagabali, Indrabati and Tel, etc.

9. Delineation of sandsplays and their extents during last floods and suggestion for land reclamation.

SUMMARY AND CONCLUSION

Flood mapping has become increasingly important for proper and safe landuse management and planning in flood prone areas. This will predict the area, that will be inundated by a major flood. The accurate delineation of the maximum flood boundaries with remote sensing can eliminate much of the expensive ground survey. The repititive coverage and temporal data collection method of satellite remote sensing techniques have demonstrated the capacity to map the flood inundation during the flood as well as after the recision of the flood water. The detailed hydromorphological maps prepared from aerial photographs can provide guidelines for flood control measures.

With satellite remote sensing data the nature and extent of mudflow and sandsplay due to flood can be determined for relief measures.

Thus the advanced technique like remote sensing and professional interpretational assistance will provide detail information of the flood. So an integrated approach together with remote sensing technique can improve the flood plain management.

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* * *

"Submission to the State law is the price a citizen pays for his personal liberty."

"If we all discharge our duties, rights will not be far to seek."

—*Mahatma Gandhi*

Genetic Engineering

SHRI DEBAKANTA MISHRA

Genetic Engineering or recombinant-DNA research or gene cloning or genetic manipulation, as it is variously known is after all only a technique. The scientific community is now acutely aware of this new technology. Since the fifth decade of the present century scientists have been probing with ever increasing success, not only the secrets of the cell but the master molecule of life: DNA, or, deoxyribenucleic acid, the substance, coild in the chromosomes of living beings, that carries the genetic code and determines heredity. The genetic engineers are now snipping DNA from one species, splicing it with that of another and inserting the hybrid into a cell that acts as a miniature but astoundingly production factory, stamping out billions of copies of everybody.

The tools required for recombinant-DNA research have developed in a straight forward way: biochemists were studying a number of enzymes for their own sake as well as their potential use in gene splicing. The fact that the enzymes were available either commercially or from friendly sources helped. The other important progenitor of the advances was molecular biology, both for bacteria and animal viruses. Rearrangements of their viruses and their ability to carry host DNA from cell to cell, were recognised. The conceptual leap was in the idea that such recombination need not be limited to normal virus hosts and related species, but could include any gene sequence at all, natural or synthetic.

The Pioneers: Walter Gilbert, Frederick Sanger and Paul Berg.

Gilbert was originally a theoretical physicist at Harvard University. Jame Watson (a 1962 Nobelist, for determining the structure of DNA) convinced him in early sixties that there was a lot of excitement in molecular biology. Since then he switched over to molecular biology and never looked back. By 1966 he had earned international recognition for his researches on repressors that inactivate genes until they are needed. Nobel Prize was awarded to him for the development of a technique to read DNA by determining the sequence of the four chemical units, or bases (A, G, C, T,), that constitute the letters of the genetic code. Gilbert and Allan Maxam used chemicals that attack the bases selectively to break up a long strand of DNA, producing segments of various lengths. An electric current forces the segments to travel at different speeds through a viscous gel. The segments form bands that can be studied to determine the sequence of bases in the original strand.

A second technique was developed by Frederick Sanger of Britain's Medical Research Council. Incidentally Sanger was awarded Nobel Prize for the second time in 1980. His first award, in 1958, was for determining the chemical sequence of the aminoacids in the protein insulin. Last year's Nobel Prize was awarded to him for developing a new technique to determine the sequences of bases in a long strand of

DNA without breaking it into small segment. Sanger obtained segments by copying the DNA strand with an enzyme, being able to halt the process at short intervals. His sorting procedure was the same as that used by Gilbert and Maxam.

Paul Berg, a Professor of Biochemistry at Stanford has worked on every phase of the transcription and translation processes that lead from DNA's base sequence to a corresponding protein. His share of the Nobel Prize was awarded for his pioneering gene splicing experiments, which have since earned him the title of "the father of genetic engineering". In these pioneering experiments, he isolated a DNA segment and inserted it into the genetic material of viruses. The viruses injected their genes into bacteria. The bacteria then reproduced themselves along with "instructions" Berg had given the viruses. Today the process yields bacteria that produce insulin and interferon.

In fact, Berg was the central figure in the 1975 consensus on safety guidelines for recombinant DNA research. But now he and his peers are convinced that the hazards of such experimentation are minimal. So, he is leading the campaign to prevent federally enforced guidelines from slowing research.

The Microbial Gold Rush

During the next decade, recombinants should allow exploration of many issues concerning human welfare: genetic diseases, the molecular nature of cancer, aspects of the body's immune defences, the mechanics of aging, and many other factors that are affected by the functions of genetic material. The commercial promise of the recombinant DNA technology has received hide attention, although so far only mammalian proteins have been obtained and those in very small yield. The microbial gold rush is typified by news that a company, Biogen, has used genetic engineering to persuade microbes to make human leucocyte interferon. Interferon is a promising treatment against viruses and cancer. Several terms of scientists are racing to market it. Biogen's statement gave no details. although academics from four countries are involved and the work was done in a University. Biogen has applied for patents. In the United States, which at present leads in commercialising the new products of genetic engineering, there has always been an entrepreneurial tradition among academic scientists, particularly since the growth of the transistor/microprocessor chip. The fastest pace is being set by small companies in California, started by university scientists with venture capital banking from big industries. For example, Genetech, one of California's genetic engineering companies, has already produced human insulin, a brain hormone, and somatostatin (useful in diabetes and gastric bleeding) in the market during three years of its existence. It is at present trying to engineer genetically a foot and mouth vaccine for cows.

Japanese industry is also very active in competing with big and small companies of USA to introduce its own products in the world market. European industry is beginning to make up for its slow start in the bugs business.

The Future

Bernard D. Davies, Professor of Bacterial Physiology at Harvard Medical School, in an article entitled "Frontiers of Biological Science" (Science, Vol. 209, 4 July, 1980), writes:

"Genetic engineering has been a source of concern, on the tacit assumption that if we should learn how to cure monogenic hereditary diseases we would use the same power to modify personalities genetically. On technical grounds, however, the extrapolation seems unwarranted, both because most of the large number of genes contributing to any behavioural trait and because most of them will have made their contribution to individuality before birth, but the most fundamental contribution is that any basic knowledge is double-edged, with both good and bad possible applications and we cannot foresee these in detail. I would suggest that this principle applies not only to knowledge yielding novel powers to manipulate genes, but also to knowledge about the biological roots of human nature. To be sure, such knowledge often encoun-

(See page 36)

Environmental Dilemma

SHRI BISWARANJAN DAS

Technology is widely credited with many good things in this morden world. Technology has greatly magnified the wealth that is produced by human labour ; it has lengthened lives and sweetened the fruits of living. It is highly developed nations of the world who are the immediate beneficiaries of the good that technology can do. They feel happy that they have made their own environment and no longer depend on the environment provided by the nature. In search for the benefits of morden science and technology, they have been enticed into merely a fatal illusion. Their technological intrusion into environment is no longer small. There is now simply not enough air, water and soil to absorb the resultant man-made insults to environment. Their technological intrusion has threatened, narrowed, eroded and shortened the lives of hundreds of millions of human being in poorer countries in spite of all their inherent potential.

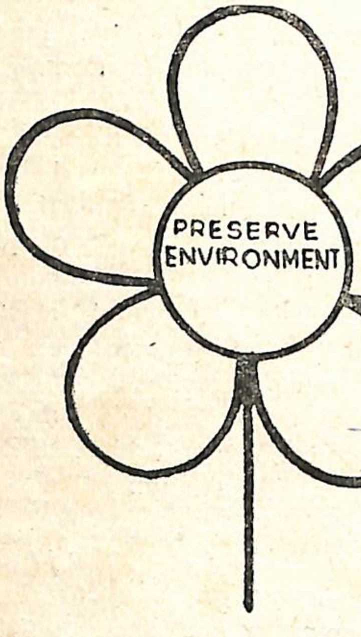
They had taken for granted that the nature and the present environment will continue, as it always has, to support life and livelihood, provide the air for breathing, the water for drinking, the food for eating, and much of industrial raw materials. They take it for granted that this is their biological capital, the basic necessity on which the total productvity depends. One cannot forget that environment makes up a huge, enermously complex living mechine and on proper functioning of that mechine depends every human activity. Without photosynthesis activity of green plants there would be no oxgen to support human and animal life. Without action of plants, animals and myrads of micro organism in aquatic systems, we can not have pure water. Without the biological process that has gone on in the soil for thousand years, we would have neither food crops, oil or coal.

Nice balance of multiple biological process makes a stable environment. Canopy of leaves and the mat of roots provide protection against erosion of heavy rains. Denudation of vegetation by fire and brutal fellings of trees permanently alter the life supporting properties of the forest or plain land that was once fertile. Automotive transportation provide smog and massive amounts of lead that induce deteoration and disease. For powerful effects of new insecticides wild life is dwindled and ecological system becomes unstable. Effects on human body is still unknown.

In natural lakes and rivers organic wastes are degraded by the action of bacteria of decay which convert them into inorganic substances like carbon dioxide, nitrates and phosphetes. In turn these substances nourish plants which provide food for the animals. In sunlight plants also add to the oxygen content of the water and so support animals and the bacteria of decay. This is a lightly woven cycle of mutually dependant events which, in nature, maintains the clarity and purity of water and sustain the population of animals, plants and microorganisms. If water is polluted, this biological cycle levels down, the purification process collapses and water becomes foul.

Increase in use of synthetic detergents and fertilisers for increased agricultural products, water pollution is gradually increasing.

New habitats are being planned but avenue trees, public parks and gardens have low priority and come up casually. In older towns rate of urban growth is so high that there is pressure on available land. Bungalows with beautiful sorroundings give place to multi-storied structures. Instead of fitting in the structure to the sorrounding, the area is cleaned off. There after no attempt is made to plant trees. The sorrounding is not recreated. No attention is paid for recreational area. Factory areas are not separated or nor kept away from residential area. Both the environment and air gets polluted. Psychologists of human relations may trace unrests, social tensions and riots to the backdrop of frightfully over populated cities where environment is polluted due to loss of ecological balance.



Man lives in aggregation that vary from a small village to a large metropolitan city. These settlements, irrespective of their size, have to be so organised that their needs, such as, housing, food, education, employment, health care and transportation are fully catered to. This is equally applicable to new colonies set up by Government and project authorities. If the organisation is not adequate to the population, or if there is not sufficient care, then villages become insanitary and towns and cities become congested, noisy, disease-ridden and full of slums. In both cases, the quality of life suffers and man becomes unhappy. It has to be realised that factors that make life pleasant and worth living are not only those that are obtained through spending money, but also a proper attitude and way of life.

Earth's water belongs to mankind and fresh water has been one of humanity's precious needs. Wars have been fought for it and civilisations have vanished from earth for water scarcity. For over hundreds of millions of years, water has been one of the most powerful agent in shaping and re-shaping the face of the earth. It determines the climate, forms the soil in which crops and forests take root. Improper location of industries, use of pollution technologies and inadequate waste treatment facilities are responsible for deteoration of quality of water in rivers and water courses. Fertilisers are prescribed and used without knowing the requirement of the soil and excess fertilizers are washed away during rains into water-courses. Pesticides and weedicides are not used to the extent it is absolutely necessary or with caution.

We cannot halt economic progress that is inevitable for developing countries if they are to deal with human problems. Without economic growth a poor remains poor. But economic growth means manipulation of the traditional environment and injury to the environment can take place. When nature is abused, it's revenge is inevitable.

The question, therefore, is not whether there should be continued economic growth nor the question is whether the impact on the environment must be respected. These two considerations are interlocked. All developmental programmes including industrial growth must have to build into their infrastructure the inexpensive but practical preventive measures necessary to avoid the ecological damage. This can be done in close co-operation of economists and ecologists, of social and physical scientists, of experienced political leaders and development project specialists. We can avoid some of the more costly and needless mistakes the developed countries made in the past and suffer now.

There is also need to begin with an evaluation of human needs and desires, determine the potential of a given environment to meet them, and then determine what engineering operations, technological progress, and economic resources are needed to accomplish these desires, in harmony with demands of the whole natural system—there is need to reassess our attitudes towards the natural world on which technology intrudes.

Architect is the designer of places for human habitation and what is designed for the use of man must fit into the natural design of the environment. Habitat of man could be designed such that man can seek sun's heat when it is needed or shun it when it is too hot, instead heating and cooling with man made machines. Let there not be a single hospital or habitation, conceived without provision of water in the premises and if air is not pure. One has to know the chemisty of air-quality areas, the biology of water system and ecology of the domestic rat and cockroach along with the principle of economics, architecture and social planning. The choice must be on the pattern of growth which will yield a combination of high economic gain with low environmental risk. It is the respect for man and his home that has to be translated into practical action, Man has to be protected from hazards which can injure not only his health but also his spirit.

It is heartening to observe that fight against environmental degradation has already begun. Thanks to the Planning Commission for having approved the programme of environmental preservation through the N. S. S. in colleges and Social Service Groups in schools. These groups have started contributing significantly by taking up many tasks of environmental preservation, from hygiene and planting of trees to taking care of gardens and parks in countryside. Work already done in this regard is really commendable. The student community, while working for environmental improvement of the countryside, must not forget the environment of their own campus. They are to beautify their own sorrounding in colleges, hostels and even in their own house. They are to take care of the sanitation in their own mess and canteens and guide all the persons who are ignorant of the evils of insanitation and un-healthy environment.

There is a countrywide massive tree-planting programme. These are to be co-ordinated for their survival and gradual development. At the same time it would be necessary to preserve the forests and parks as it is necessary to maintain the total environment for plants and animals. It has to be remembered that man's progress and prosperity must be achieved without alienating man from his heritage and without destroying nature of its beauty, freshness, and purity that are essential for a healthy, contented life. Every person in the society has to understand the intimate relationship between quality of the environment and human well-being.

Builders of dams and multipurpose projects may see that ecology of the region is not adversely affected and sorrounding area is preserved for its aesthetic value. Natural lakes and natural water reservoirs are saved. Provision of water sports may appear a rough and dangerous look but is worth trying.

Those who work in offices may think a while that if they can keep their work place and table a bit clean, their office can remain clean. If the premises and atmosphere can be kept clean, their spirit will be high. In market places, both the traders and customers can help each other by decent dealing and decent behaviour to keep the environment clean and gay. Sanitation in hospitals and dispensaries can be maintained and environment can remain peaceful with little care and will certainly healup the inmates, both in their body and mind. Timely action of the city fathers and health personnel of Municipalities and other local urban bodies can save and help maintain the environment in the cities and towns and keep the citizens in high spirit.

Let us work for a decent environment and we can easily set aside indifferent attitudes and social tensions that is killing us every now and then.

Senior Maintenance Officer
Information & Public Relations Department.

* * *

What, after all, is this State idea, this idea of the organised community to which the individual to be immolated ? Theoretically, it is the subordination of the individual to the good of all that is demanded; practically, it is his subordination to a collective egoism, political, economic which seeks to satisfy certain collective aims and ambitions shaped and imposed on the great mass of the individuals by a smaller or larger number of ruling persons who are supposed in some way to represent the community.

....There is no guarantee that this ruling class or ruling body represents the best mind of the nation or its noblest aims or its highest instincts.

—SRI AUROBINDO

Music in Blood

SHRI P. K. PATSANI

Her flamed petal of mind swings
the unstilled face of the pool
a flickering laugh blooms a lily
season comes like a swan to greet
entirely opens the womb of the pond
fueling the timid sun of winter
silence the seed of mantra in nature.

A lily breathes through the pond
darkness opens its heart swings
in light of petal,her ignorant mind
dances in swings of knowledge
the dawn appears like a force
relates the bliss of morning in her body
holiness winged in the atmosphere
steels the vibration of the rustic mind.

A voice unseen pours from the sky
her colour of wedding days experience
dawned like the flat bottom of the pond
looking a lily for bed.
Her breathing moves the shadow of life
silently kissing the bone
churned in a tide of feelings.

She moves in solace to the golden temple of bliss
her vermillion mingled in love
a palmful water mirrors her life.
A golden bird images her days
sweeping her boredom with the tone of freedom.

The struggle opens like a cave
with the two eyes of bliss and sorrow
austerity sleeps like a dove
vibrating the wings of thought
glancing the grains of bliss
on the silent bed of earth.

The rest and passion beam like
the window of life, the root hairs
draws the current of sun and storm
the knowledge makes it pliant.
A new appeal of love,
a little child clasping the entire heart
with an unseen belt
ranging the tiresome mirage of hopes.

She riches the horizon of sadhana
the company of crows feeds her sympathy
Her vermillion face descends
with a lively march of hopes
a bliss peeps in her spring
devotion sounds like breathe
curring the piece of my conscience
to the noblest island of culture.

Her eye winks with matured love
she wears a vibration of peace and harmony
her cobra eliminating the scale of poison.
She hangs upon her mouth like a sweet voice
the life sweetly bosomed a jocund company
shattering the face of a hungry rainbow.
Her arrogance dies in the pool of rest
opening the clutch of hell.

The life swings in her like elephant
on the forest of earthly body
ignoring itself to the pleasure
stings to the thorns of desire.
The disease hides with venom
the serpent crawls over the juice of life.
awaiting an era of combatful music
in the blood of unseen days.

M. L. A., Khurda

* * *

(*From page 30*)

ters resistance, because its possible contradiction of treasured preoccupations, and even more its possible distortions, can have political consequences. One safeguard is to recognize the limited power of science in this area : it cannot prescribe solutions to moral problems, for these involve value judgements as well as estimates of reality. At the same time a more accurate perception of reality will surely be helpful. The extent of this help is one of the large uncertainties in the future of biology."

However, at present it seems to thrive on interdisciplinary contact, on easy contact between science, industry and medicine. One of the joys of this field is that there will be goodies for all. The research scholar with a good, elegant and insightful idea in molecular biology should, during the next decade, find little problem in putting the idea into practice. The big battalions will be focussing on finding solutions to the obvious problems to shape a better future for man.

Reader, Ravenshaw College, Cuttack

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Tourism : The Foreign Exchange Earner

In 1951, India received a meagre 16,829 tourists bringing a foreign exchange earning of Rs. 7·7 crores. In 1980, India recorded international tourist arrivals of 800,150 with tourism receipts amounting to Rs. 482 crores.

Unprecedented economic prosperity in many parts of the globe in the post-war years, together with greater leisure and the revolutionary growth of air transportation, have put tourism at the top of world trade today. It is now the world's second largest export industry. But tourism is not merely an industry. It is a movement. Several industries are geared to serve this movement.

Tourism is of course not a new phenomenon. People have been travelling for thousands of years, on pilgrimage or in quest of new lands and new ideas. But tourism as we know of it today is a post-World War II phenomenon. It has been the fastest growing activity in the past 30 years.

Thirty years ago, in 1950 only 25·3 million tourists undertook international trips spending an estimated US dollars 2·1 billion. In 1980, 285 million world travellers spent US dollars 92·5 billion. The growth has been so great that it is really a futile exercise to work out the percentage growth.

HUMBLE BEGINNING

In India tourism was an unknown activity at least one which deserved hardly any attention in 1950. However, the country must have woken up by 1951 for monitoring of this activity had started by then. In that year, India received a meagre 16,829 tourists bringing a foreign exchange earning of Rs. 7·7 crores. By 1955 tourist arrivals totalled 33,269, a compound growth rate of 18·6 per cent for the previous five years, with a foreign exchange earning of Rs. 10·30 crores. By 1970, India received 280,821 foreign tourists and earned foreign exchange of Rs. 40·60 crores. In 1980 India recorded international tourist arrivals of 800,150 with tourism receipts amounting to Rs. 482 crores.

While the tourist arrival figures are based on an actual head-count taken from disembarcation cards, tourism receipts are estimated on the basis of tourist expenditure surveys carried out for the Department of Tourism by research agencies, except for the 1951 and 1955 figures quoted above which were the estimates of the Reserve Bank of India. The Reserve Bank of India even today does keep an account of the invisible earnings of the country. And there is quite some difference between the tourism receipts as estimated by the Reserve Bank of India and the Department of Tourism. As against the Department of Tourism's own estimates at Rs. 482 crores in 1980, provisional estimates based on RBI's figures indicate that foreign exchange earnings from the travel account in 1980-81 amounted to Rs. 785 crores.

In tourist statistics expatriate Indians visiting India, Pakistani and Bangladesh nationals are not counted. The Reserve Bank, on the other hand, takes into account all foreign exchange brought into India by any traveller irrespective of his nationality and irrespective of his lengh of stay or purpose of visit.

While the difference between the estimates of the Department of Tourism and those of RBI are yet to be reconciled; one can safely assume that tourism receipts of the country in 1980 were somewhere between Rs. 500 crores and Rs. 785 crores. The gap is substantial. None the less, even tourism receipts sssumed Rs. 500 crores, it makeks this industry the third or fourth largest foreign exchange earning industry of the country.

A LONG WAY TO GO

This somewhat rosy picture of the place of tourism within the national economy, should be viewed against the world perspective. Of the 285 million world travellers in 1980 India received a meagre 800,150 or 0·21 per cent of the world traffic. Of total world receipts of US 92·5 million India received US 602 million (Rs. 482 crores) or 0·65 per cent of the world receipts. This of course is not a very happy situation.

But the comparison is somewhat misleading. Some 93 per cent of the world tourist traffic is accounted for by the developed countries with only seven per cent coming to the developing countries. Only 0·5 per cent of the world traffic comes to the South Asia region. Europe along accounts for 73 per cent of the world traffic. For a Frenchman to cross into Spain or for a Swiss to visit Italy is a matter of only a few hours even if he were to motor down. No wonder countries in Europe received 208 million tourists last year.

This world perspective hold bright prospects for the vast potential that is still available for expending the base of tourism in India The growth of tourism in this country over the past 30 years has been phenomenal alnd it will continue to grow very substantially in the next decade or two and in fact beyond.

In 1979, the country had a poor year recording a growth of only 2·2 per cent. 1980 was twice as good with a growth of 4·6 per cent. And in the first six months of this year, over 10 per cent growth has been registered. However, this is not quite satisfactory. After all-India had been recording increases of 15 and 20 per cent. In fact this is the only sector which maintained a steady increase of 14·6 per cent in the decade 1968—78.

OTHER BENEFICIAL EFFECTS

Besides the direct foreign exchange earnings from tourism, there is, of course, the multiplier effect. For the tourism industry in India this has been calculated at 3·27 times. This means that every tourist dollar that comes into the country turns around within the economy 3·27 times before it finally dissipates. This means that the Rs. 500 crores earned in foreign exchange by the country in 1980 generated a total economic activity worth Rs. 1635 crores.

Tourism of course is not to be measured in terms of rupees and paise or dollars and cents only. It is a multidisciplinary activity. There are other and perhaps even more important benefits accruing from tourism. Tourism has led to a more equitable distribution of incomes, generation of employment particularly in the rural areas, national integration and communal harmony and international understanding and goodwill. Tourism is an area where almost the sky is the limit.

(Courtesy : Press Information Bureau)

Tribals and Freedom Struggle in Orissa

Dr. PRASANNA KUMAR MISHRA

Orissa was occupied by the British in 1803. Immediately after this, in 1804, the new ruler faced considerable resistance from the native rulers of Khurda, Kujang and Kanika. The brain behind this confederacy was Jayi Rajaguru, the Diwan of the Raja of Khurda. The result of this resistance was that all these Rajas were deposed and imprisoned, and as an exemplary punishment Jayi Rajaguru was hanged to death. Although the initial resistance to the British Government could not achieve any fruitful result, yet the 'idea of resistance' had its impact in the minds of the people of Orissa.

Hereafter, throughout the 19th century, there had occurred many risings directly or indirectly against the British rule. the speciality of these risings was that the tribals like the Kandhs, Savars, Bhuyans, Juangs, Gonds, Binjhals and Kols had taken active part in all the risings and the leaders of them were mainly the tribals. Another significance is that all those risings had taken place in the garjats of Orissa, and after 1817, the coastal Orissa was completely silent at least for a full century. Therefore, it would not be unjustified to claim that the real freedom fighters of Orissa were the tribals.

In March 1817 Bakshi Jagabandhu and Krushna Chandra Bhramarbar Ray revolted against the British Government. They were first helped by 400 Kandhs of Ghumsar and then the Kandhs and Savars of Banpur supported them. Although the revolt was supressed by the end of 1817, yet Bakshi Jagabandu and his adherents could be able to continue their struggle only with the active help of the tribals of Nayagarh, Banpur, Daspalla, Ghumsar and Boudh till 1825.

In Ghumsar Raja Dhanajaya Bhanja was deposed in 1835 by the British due to non-payment of heavy arrear tributes and disobedience of orders. Consequent upon his deposition the Raja revolted against the alien ruler with the help of his Kandh-subjects whose leader was Dora Bisoi alias Birabar Patra. The Raja died in December 1835. But Dora Bisoi with the help of his ardent supporters, the Kandhs, continued the struggle for restoration of native rule till 1837 when he himself was imprisoned. His true successor was Chakra Bisoi, the 'champion of meria' who carried on the struggle for as long as 20 years.'

Chakra Bisoi was a Kandh leader and was supproted by the Raja of Angul to fight against the British. He was also supported by the Kandhs of Boudh, Kalahandi, Patna, and the Savaras of Parlakimedi. The British authorities made various attempts to capture him but failed. It was in fact a great concern for them. Chakra Bisoi, the undaunted leader of the tribals, was at last lost during the great Indian revolt of 1857. Besides him, there were other tribal leaders namely members of the Kahnar family of Boudh and Dandasena of Gaiba in Parlakimedi.

From 1837 to 1857 the tribals like the Kandhs and Savaras had actively participated in the risings which occurred in Banpur, Nayagarh and Daspalla. During the mutiny of 1857 Orissa was comparatively less active except the occurrences in Sambalpur and other tributary mahals.

In Sambalpur Surendra Sai rose against the British in August 1857. He was supported by the tribals like the Gonds, Binjhals, and even the Kandhs of Ghumsar. As a result of the tribal people's support, Surendra Sai could be able to fight against the British for long five years. It so happened that the tribal population of the Central Provinces came forward to help him in the days of his disaster.

In the sixties of the 19th century, Keonjhar rose in rebellion under the leadership of Bhuyan Sardar Ratna Naik. The British authorities disregarding the customary usages and wishes of the tribals like Bhuyans and Juangs seated one Dhanurjaya Narayan Bhanja on the Gadi of Keonjhar as Raja. Such a decision enraged the subject-population who ultimately took resort to rebellion. The tribals demanded for their legitimate right and dismissal of the new Raja. The rising was ruthlessly suppressed, Ratna Naik was hanged to death and six of his followers were also similarly punished. But due to maladministration and economic oppression in the estate for long 20 years the triabls again rose in revolt in 1891. The Bhuyans, Juangs and Kols took active part in this decade long struggle. The leader was a literate young Bhuyan named Dharanidhar Naik. Many of the school teachers from tribals and non-tribals supported the leader in his mission. This tribal rising of 1891—94 was unique in the history of Orissa's freedom struggle.

During the period from 1870 to 1890 there were sporadic tribal risings in a few garjat states like Kalahandi and Daspalla in which the Kandhs were the main participants. Though they were short-lived, yet these risings cast a considerable impact upon the future generation. In the last decade of the 19th century, Nayagarh, Daspalla, and Ranpur rose in revolt and in which the active supporters were the Kandhs. Here began a new slogan 'Praja Meli' or 'Praja Bidroha' by the people.

Thus, throughout the 19th century, the tribals were always against the alien rulers or the oppressive rulers, whoever they might be, either the British or the native chiefs. In fact, these tribal heroes showed path to the future generation to fight against the British to free their land, and thus were the forerunners of the new mission in the 20th century.

In 1914 the famous Kandh Meli took place in Daspalla, in which the whole Kandh population rose in revolt against the British. The arbitrary decision of the British authorities in selecting a person to succeed to the throne of Daspalla was the root cause of this Meli. The meli was suppressed and the melias were punished; some were given death sentences and many others were awarded different kinds of sentences.

During the Satyagraha agitation and Quit India movement, Orissa had taken significant role. The tribals were not dormant during these days. One glaring example of such a tribal leadership was exhibited by Laxman Naik of village Tentuligumma in Koraput district. Inspired by Radhakrishna Biswas Ray, Radhamohan Sahoo and Sadasiv Tripathy, Laxman Naik was courted arrest many times in 1939 and 1940. He himself inspired his hill tribes to sacrifice for the cause of the nation. He and his close associate Nila Patro convened many meetings at different place of Koraput and they had made Bonda hills as their place of shelter. At last Laxman Naik was captured. On a false charge he was tried and hanged to death in Berhampur jail on 29th March 1943. Eighteen were convicted to lesser terms, and thirty to life imprisonment.

Orissa will always remember these legendary tribal heroes lika Dora Bisoi, Chakra Bisoi, Ratna Naik, Dharani Naik and Laxman Naik who fought ungrudgingly for the sake of their fellow tribes and for their mother land. And that the posterity has really learnt heroism and fearlessnes from these tribal heroes, there is no doubt about it.

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Domestic Animals and the National Economy

Dr- P. C. PATTANAYAK

Domestication, although means tameness this definition is not complete since wild animals can also be tamed but they are never domesticated. Conversely, ranch-raised cattle and horses are never tamed but they are domesticated animals. Hence, domestication implies, bringing the animals growth and reproduction at least partly under the control of man. This definition has also a lacuna. The cat and pigeons are also domesticated but their breeding habits and matings are usually not controlled by man. Nevertheless, this definition has been accepted almost universally.

The story of domestication of animal is interesting, though based on some speculation and guess work. Since the domestication of animals began long before the written history but long after the man became user of tools made up of bone and stone. The interesting part of the story is that the animal kingdom contains hundreds and thousands of species of animals but man domesticated only a few of them. Mainly two factors may be attributed to this. That mental characters of other animal made it impossible to domesticate them and the second factor may be that man domesticated only those animals having characteristics useful to him.

Nothing is clearly known as to how domestication of animals was accomplished. It is guessed that hungry animals and crippled ones were captured and man began to learn how to take care of them. Whatever may be the mode of capture of the untamed animals but hunger was the most effective state to control and tame the wild ones. The animals which could not be controlled, like African elephants were escaped from domestication.

Amongst all the animals domesticated, the cow has been loved the most, since the time probably of Neolithic period. Yeshode, the mother of Lord *Srikrishna* in famous Hindu legend, used to wait anxiously for *Godouli sandhya*, the sacred hour of the cow dust for the return of Krishna, with his herd of cows. This does not mean only the return of the great hero but also signifies the importance of cows which dominated the community life since that time. That is how she deserved and continue to deserve the popular name "Gomata" the cow mother.

Let us analyse how the cow among all the domestic animals had the advantage of the superiority over other animals to deserve this popular name. Cow being a ruminant is mostly consumer of roughages converting it to a most valuable food. the milk. In fact, the value of milk in the diet is inveluable. A sizable portion of Indian population is vegetarian for which the milk and milk products are the only source of protein supplement. Apart from that, the milk protein is unique in nature.

The "Livestock" which includes cattle, buffaloes, sheep, goats, horses, ponies and poultry and the livestock products which include, milk, manure, hides and skins animal casings, meat and meat products and by products, bonemeal, hairs, bristles and wools etc. contribute to the National income substantially and the foreign exchange earning from this source is enormous. Although India possesses a major portion of the world's livestock population, her role in the International trade in livestock is insignificant. Neither we import any livestock regularly nor we export them in bulk except a few cattle, sheep and goats to our neighbouring countries like Ceylon and Nepal, etc. If proper steps are taken, we can play a major role in international trde of livestock, since the Zebu cattle have been proved, beyond doubt, to be resistant to diseases, adaptible to adverse climatic conditions and yield high butter fat. Recently U. S. A. and some other countries have imported our Zebu cattle to infuse the above qualities into their well recognised breeds of cattle. On the other hand, we can improve the productivity of our cattle by infusing the exotic blood of a breed suitable for tropical climate. During the last five year plans, cross breeding and grading up scheme have been found to be successful in this respect.

India with over forty million sheep gets a good income from this industry. Sheep produce wool and mutton and the by-products like skin, bone and animal castings etc. This industry provides employments to a lot of people of our country. Besides being a dual purpose animal, supplies wool and mutton profitably. There is a good prospect for sheep industry in India as a vast part of the country is not arable and has a lot of mountain ranges suitable for sheep raising. Sheep by nature, consume a wide range of fodder plants converting them into profitable products i e. wool and mutton etc. Further, sheep do not require expensive houses for their shelter which is an advantage to the poor farmer. India produce huge quantity of wool. Though the wool, produced by Indian sheep are coarse and hairy, is best for manufacture of carpets. India has almost a monopoly in supplying the carpet wool to the world market and the demand is increasing steadily, while demand on fine wool is decreasing after the advent of synthetic wool fiber. Research works in this field during last fiffeen to twenty years have proved that the wool of the Indian sheep can be improved in quantity and quality by selective breeding, cross breeding and grading up.

There is a good demand for Indian frozen mutton in foreign countries like U. S. A., West Germany, France and other neighbouring countries. This demand is also increasing from Middle East countries since the method of slaughter practised in India is suitable to them. The sheep industry supplies most of the skins to the world market after meeting the internal demand for leather goods. As such the Indian hides and skins are very popular in the world market due to presence of less fat and hair or wool. But the trade on raw hides and skins in the International market is not encouraged as it would provide employment in our country for the manufacture of finished goods which can be marketed Internationally to earn more foreign exchange. In fact, there is a good demand for our finished leather goods, especially the foot-wears in foreign countries. This can be boosted up by improving the tanning industries, so that better finished goods can be manufactured synchronising with quick change in fashion world over and competing with its lone rival, the plastic industry.

The goat in India is calledl the"Poor man's Cow" since it is cheaper than a cow and possible for the purse of the pooe farmer, who gets the milk from this animal for his children, lest would have beer deprived of the milk from other source. But during the recent past, the goat has been accused as most destructive for the forests which also plays an equal part in the country's economy. But this would appear baseless if properly analysed. That the tremendous increase of human population has put a great pressure on our land, depriving grazing land for this animal. As a result, it has developed such a habit to thrive on its own way. Given due care and management, the goat will be useful in country's economy producing milk, mutton, skins, hairs and casings, It is interesting to note that goats produce 90% of the total animal casings and almost all of these are exported giving to the country's exchequer the most needed foreign exchange. Similarly, goats hair is also a good export commodity which is used for manufacture of canvas, brushes, hair-belts, ropes, automobiles, foot-mat and low quality carpets.

Poultry and poultry products namely the eggs are highly nutritive and rich in protein and should form the important item in the diet in India where the minimum *per capita* need of 284 gms. of milk per day as per the recommendation of the Indian Council of Medical Research is long way to arrive at. Hence we are to believe on commercial slogans like "An egg a day keeps doctors away" and "You never outgrow your demand for eggs" etc. With which we have already become familiar. Poultry an oldest domestic bird of our country was completely neglected till the recent years when it took a sudden stride during last two to three decades. Poultry keeping is a source of pleasure besides being a profitable business, provided they are reared strictly scientifically. This can be an off time engagement for the farmer or the female member of the farmer, can be started with less capital which his purse can afford bringing in quick return, since these birds breed rapidly and economically. With the increase in literacy and advancement of civilisation, people would definitely give up some of their blind believes and take up the non-vegetarian food habit. This with increase in population, will have a good demand for poultry industry.

Pig is one of the best animals capable of converting by-products and even waste products into protein in the form of porks. This has been felt long but intensive pig farming could not be taken up as the religion became a taboo preventing to take up such business. However, this livestock is a good source of income for scheduled caste and scheduled tribe people who are economically backward. Hence Government included development programme in the five-year plans for improving the local pigs through exotic breeds like middle Yorkshire breeds and large Yorkshire breeds in quality of pork, litter size and body growth etc. At present there is no much demand for porks in our country but this is a popular diet of Western people. It can earn good foreign exchange if the baco industry is organised well. Another useful by-product comes out from the pigs is bristle, the wiry hair found on the skin. The bristles are largely used for brushes for different purposes. It is interesting to note that India is the principal supplier of this commodity to the World Market.

So much so regarding the contribution of cattle, sheep, goats, pigs and Poultry. Any writing on this topic will be incomplete unless it mentions about the horse, camel and the mule. From time immemorial, the horse was the only mode of transport. But with rapid mechanisation and growth of automobiles, this animal has lost its importance. Nevertheless, they are felt indispensable for our soldiers in the inaccessible forward areas even now. Camel," the ship of the desert" as it is called, is still the only mode of transportation for the people of the Dry Western part of the country in the desert area. Mule is the poorman's cheapest 'Vehicle'. Though the dogs are now-a-days employed to detect criminals by the Police department, dogs and cats are yet to play any role economically, but are excellent pet animals serving faithfully to its master.

From the dawn of the creation, when the man was in the primitive stage of evolution, through the Paleolithic and Neolithic periods to the Bronge and Iron ages, he has been intimately associated with domestic animals. This bondage has grown stronger even in this atomic age. During pre-civilisation period this association was in a perfect symbiotic balance, each deriving some benefit from the other. But now the association can be properly termed as "parasitism", since the man is not only deriving benefit biologically and materially but inflicts certain amount of harm to the animals by way of neglecting in care, management, under feeding, overloading and above all, becomes too merciless often to beat these animals for no fault with them. As a result, we have lost our "KAMADHENU" which was so intimately connected with the ancient Indian culture and civilisation. This "shift to the left" in our outlook towards these animals, is definitely not a healthy attitude for the progress and development in our country. In fact, the livestock resources of our country are vast and their contribution to the national economy is substantial. To serve us better, it requires exploration and exploitation. A statistician can easily esfimate the contribution of our animals to us but what about the faithfulness ?. Can it be measured with any scale in reality. No, the science is yet to develop a scale to measure the honesty and faithfulness.

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Orissa Mining Corporation : A retrospect

With the promulgation of the Industrial Policy Resolution reserving heavy and medium industries to the Public Sector, in the field of Mining, the Orissa Mining Corporation was the first organisation to be incorporated under the Indian Companies Act, in the year 1956, as a joint venture of the Government of India and the Government of Orissa. From 1961-62, the Corporation is wholly owned by the State Government. It became a pioneer organisation in the Public Sector for systematic and planned development of the mineral resources in the State of Orissa. The initial start, however, was made with the mining of two small iron-ore deposits at Moharajpur and Tungeisuni.

During the sixties, an entirely new development took place affecting the infrastructure of a large area of the State during which the Daitari Iron Ore Project became the necleus of a massive mineral development programme for the establishment of a deep draft port at Paradeep and construction of an Expressway over a length of 145 Kms. connecting the Daitari Project with the Paradeep Port. The formation of the Orissa State Commercial Transport Corporation was an offshot of this development. With several leases acquired for exploitation of iron, manganese, chromite, limestone, china-clay and other assorted minerals, the activities of the O. M. C. have put the State of Orissa in the Mineral Map of the country and the O. M. C. has emerged as one of the premier public Sector Undertakings in the field of mineral trade and of mineral development.

At present, the activities of the Corporation are confined to production, sales (indigenous and export), and transport of iron-ore, chrome ore and manganese ore, apart from investigation prospecting and development of these and certain new minerals. The Corporation has made all round progress and achieved its desired objectives of production, transport and sales of various minerals and, in the process, has not only been able to earn a substantial foreign exchange for the country, but also has assisted in development of mineral-based industries, scientific exploitation of minerals, development of mines and, thereby, improving the lot of the Adivasi brethren in the backward districts of Keonjhar and Sundergarh by providing direct and indirect employment, housing accommodation, educational facilities, Health Centres, communication and electricity, etc. Besides the above, it has also assisted the State Excheguer by way of royalty, cess, dead rent, guarantee commission and interest charges.

IRON ORE

In the iron-ore sector, the corporation now operates nine mines. Of these, the Daitari Iron Ore mine is the largest venture of the O.M.C. A mechanised Iron-ore Handling Plant has been established at Daitari which was commissioned in the year 1974 and, since then, it is supplying washed iron-ore (lump and fines) to the M.M.T.C. of India for export. Daitari is the most important with a production capacity of 1·6 million M.T. and financial investment of the order of about Rs. 19

crores. The available reserves of iron-ore are estimated at 40 million tonnes and the grade on an average is 61·5 per cent Fe. Owing to circumstances beyond the control of the Corporation, this Project has had a chequered career for which it has not been possible so far to fully utilise the rated capacity of the O.H.P. at Daitari. However, meanwhile, certain modifications to the Plant have been completed and it is expected that the O.H.P. will reach the break-even level of production shortly. It may be mentioned here that the washed OHP ore of different sizes and grades were primarily meant for export. At one time, the OHP was facing the problem of stock piling of huge quantities of fines which came out of the plant while producing the lump ore. With the opening of avenues, though limited, for export of such fines and sales to the Steel Plant in the country, it has been possible to dispose of such fines and link it up with the normal sales as at present.

Another important project worth mentioning is the Gandhamardan Iron Ore Complex, located at a distance of about 16 Kms. from Keonjhargarh and about 250 Kms. from Paradeep Port. The Corporation is at present producing around 2 lakh tonnes of high grade iron-ore from this deposit annually for export through the Paradeep Port. As per detailed investigations a total reserve of over 250 million tonnes has been proved with an average iron content of 63·9 per cent. The Corporation has envisaged a massive programme to develop this deposit for production of 3·5 million tonnes of ROM ore per annum. The main ore deposit at the hill-top has been investigated in detail by the OMC and, on the basis of the exploration data obtained by the Corporation, M/s. MECON have submitted a feasibility report for development of an Iron Ore complex on Gandhamardan, comprising mining, crushing, beneficiation and pelletisation plants, for production of washed lump and B. F. grade pellets.

Besides the above two major projects, the Corporation has in its hand other mines in Barbil and Khandadhar sector which are primarily meant to meet the demands for MMTC and Steel Mills. Because of restricted off-take, OMC has been compelled to keep the production low in these lease areas. The present level of production of iron-ore in all the above mines is of the order of 11·50 lakh tonnes per year.

MANGANESE ORE

In recent years, the Corporation has been playing an important role in production and sale of Manganese Ore. OMC's manganese ore bearing areas are located in Barbil-Banspani sector and a small deposit in Koraput district at Nishikhal. At present, the OMC is working six manganese deposits and the level of production is around 1·5 lakh tonnes. It may be mentioned here that the OMC is one of the main suppliers of dioxide ore especially required by the industries, manufacturing batteries.

CHROME ORE

As one of the largest producers and exporters of chrome ore in the country, OMC. handles a sizeable market in chrome ore trade. It has five captive mines of chrome ore in Sukinda region. It created a land mark in 1976-77 when the Corporation exported 1·51 lakh tonnes of chrome ore, besides sale of about 53,000 tonnes to indigenous industries. However, in the subsequent years, owing to certain decline in the world market, OMC was compelled to reduce its production of high grade chrome ore.

The annual turn over of the Corporation which was about Rs. 5 crores at the beginning of the last decade (1970-71) reached a peak of Rs. 22·66 crores during 1976 77. Due to slump in the chrome ore export, in subsequent years and fall in demand of iron-ore and manganese ore the turn over stands at about Rs. 12 crores at present.

To meet the additional investment required for completion of Daitari Project, the OMC availed a loan of Rs. 5·89 Crores from the Government of India, Government of Orissa and Banks. The entire amount has since been paid back in full.

Recently, the Corporation proposes to diversify its activities towards establishment of Mineral based industies such as (*a*) 50,000 Tonnes/Year Charge Chrome Plant, (*b*) Chrome Ore beneficiation Plant, (*c*) China Clay Washery.

50,000 T/Y Charge Chrome Plant

It has already taken in hand the setting up of a 50,000 T/Y Charge Chrome Plant at Bamnipal in the district of Keonjhar. Execution of this project by the OMC will be a significant development for the economy of Orissa. It will make OMC a base for the development of mineral industries in the country as a whole. There will be renewed expectations of export trade contributing substantially to the foreign exchange earnings of the country and developing the backward areas of the hinterland surrounding Paradeep. This will also encourage technical training to the local people in the heavy and medium industries, besides providing additional employment.

Chrome Ore Beneficiation Plant

The reserves available in the leasehold areas of the OMC will be further supplemented by beneficiation of low grade chrome ore containing less than 35 per cent Cr. 203. It is proposed to put up a Beneficiation plant with an annual through put of 50,000 tonnes which will produce around 20/25,000 tonnes of concentrates, containing over 40 per cent Cr. 203.

China-clay Washery

The Corporation has recently acquired a mining lease for China-clay in the district of Mayurbhanj. A china-clay washery is already under construction and the product may go the market in early 1982. The reserves available would permit an annual production of about 50,000 tonnes of crude clay and about 20,000 tonnes of washed clay. Apart from providing employment to the tribal people of the locality, this would promote development of small scale industries such as pottery, sanitary wares, insulators, etc.

From the time of the inception of the Corporation, it has already produced over 16 million tonnes of minerals, exported over 11·75 million tonnes and sold for internal consumption nearly 4·75 million tonnes and in the process, made a business of over 133 crores of rupees.

Profit earning is not the sole criterian of any Public Sector organisation. In accordance with the policies formulated by rhe Government from time to time, the Corporation has been making strides to bring out marked improvement in the standard of living of the people residing in the comparatively backward districts of the State by making appropriate arrangements for education, health and sanitation, communications, housing accommodation, water-supply. recreation and, over and above, safety of the thousands of mine workers in different parts of the State.

Orissa Mining Corporation has given direct and indirect employment to about 12,000 persons and after the setting up of the proposed mineral-based industries, it may create additional employment for about 1,500 people in different trades in the State.

It may not be out of place to mention here that the Corporation has been maintaining excellent labour relations. The labour welfare activities and relations with the Trade Unions of the Corporation are indeed unique. The Corporation always gives priority to solve labour problem with regard to their employment, job security, working conditions, social security, wages and earnings, incentives, rationalisation and automaton, unfair labour practice, low productivity. Besides these the statutory provisions of creche, canteen, etc., have also been made in all the mines of the Orissa Mining Corporation. The Orissa Mining Corporation has adopted a policy that the disputes of the Unions can be settled by way of mutual discussions, instead of referring them to the Labour Courts. In case of any directive from the Industrial Tribunal, the Corporation implements the decision forthwith.

The Corporation hopes to march on its road to prosperity with the blessings of the Government and the industry and the dedicated services of its staff.

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OGP—MP-XII (I. & P. R.) 38—2,000—13-8-1981

ONE YEAR IN RETROSPECT

- More than 26,000 poorest of the poor families rehabilitated under a new scheme. (Economic Rehabilitation of the Rural Poor)

- Supply of high yielding seeds increased six times. During 1980-81, 1,467.38 quintals of seeds supplied to the farmers.

- Co-operative loan given to 1'3 lakh more farmers and the amount disbursed was Rs. 15 crores.

- Irrigation facilities extended to 1,32,000 hectares more.

- Installation capacity of Super Thermal and Hydel Projects increased.

- Present installed capacity of 914 Mw. will be more than doubled in 1984.

- New Industrial Policy adopted. Various incentives given to entrepreneurs.

- Construction work of Rs, 1500 crores Aluminium-Alumina complex-biggest in Asia-started at Damanjori in Koraput district.

- 190 medium and large scale industries in the State/joint and private sector identified with an investment of nearly Rs. 1000 crores.

- Free education up to Class VIII introduced. So far it was limited to Class V.

- Country's third Sanskrit University set up at Puri.

- Stipend and hostel expenses of Scheduled Caste and Scheduled Tribe students enhanced.

- Ten Primary Health Centres up-graded to thirty-bedded Hospitals.

- Nearly 9,000 tube-wells taken up during the year.

- A new scheme for installation of tube-wells in 3,500 coastal villages at the cost of Rs. 29 crores being taken up with help of Danish International Development Agency.

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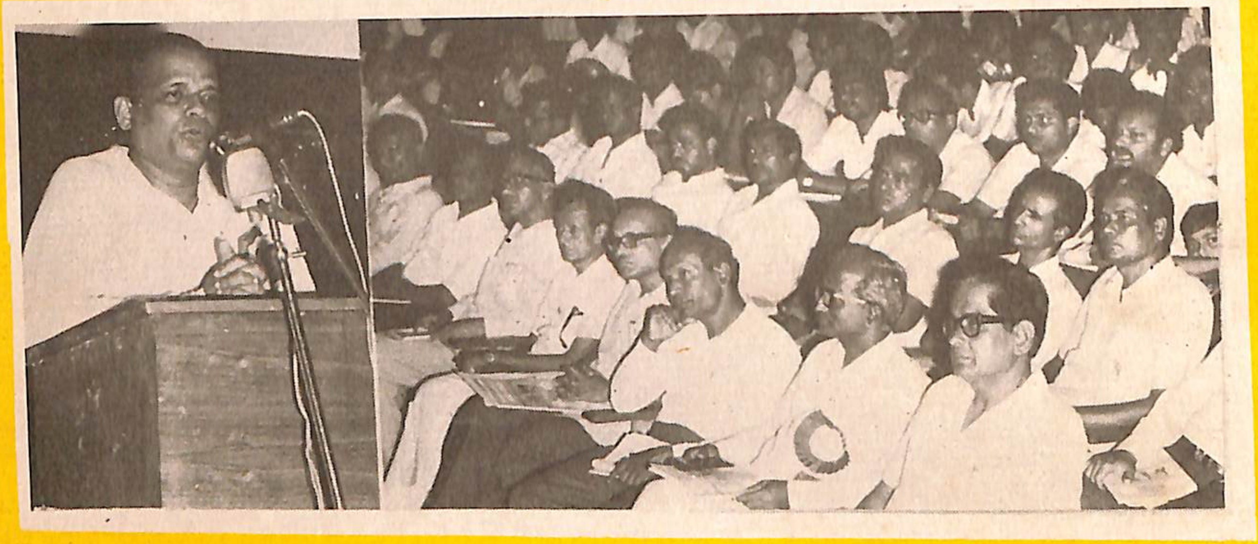
Chief Minister Shri J. B. Patanaik addressing Collectors' Conference at Orissa Secretariat on June 25, 1981.



The concluding session of the Silver Jubilee Celebration of Veterinary Science and Animal Husbandry College was held on July 17, 1981.

Photo shows the Chief Minister Shri J. B. Patanaik speaking on the occasion

Shri J. B. Patanaik, Chief Minister inaugurated the Conservation Training Camp of Archaeological Survey of India at Bhubaneswar.

Photo shows the Chief Minister addressing the audience.